Fught, August 1, 29 Edit page 16



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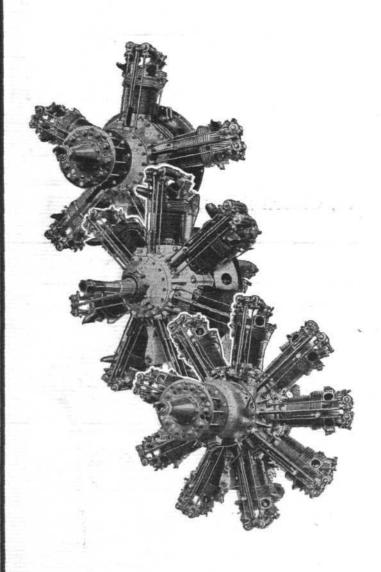
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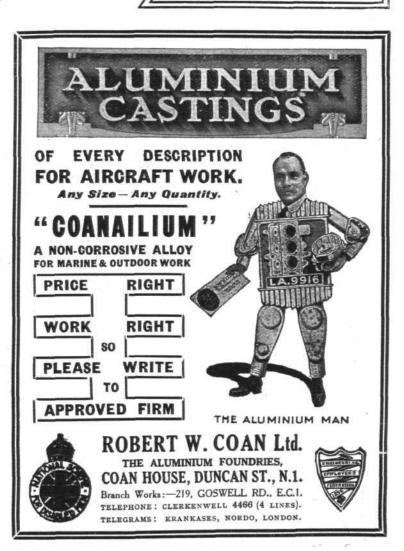
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Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport
OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM

No. 1075. (No. 31. Vol. XXI.)

AUGUST 1, 1929

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DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list—

1929.

Aug. 1-14 French Light Plane Meeting, Orly.

Aug. 10 Air Pageant, Wythenshaw, Cheshire.

Aug. 15 International Ballcon Race, Poland.

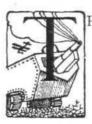
Sept. 6-7 Schneider Trophy Race, Solent.

Sept. 10-20 Aero Club de France Meeting, Le Baule.

Oct. 1 Gordon-Bennett Balloon Race, St. Louis,

Oct. 31 Guggenheim Safe-Aircraft Competition Closes.

EDITORIAL COMMENT



HE second aero exhibition since the war has come and gone. The details of the exhibits have been dealt with minutely by the technical staff of FLIGHT, and the time has now come to place on record some general reflections on the eleven days spent in Olympia. As the exhibits sorted themselves into order

out of chaos, we had evidence that when the turnstiles on Tuesday, 16th, revolved there were high expectations of a good show. Those expectations were more than fulfilled. It was a splendid show. That

The Aero Exhibition is not only our own opinion; it has been confirmed by everyone with whom we have discussed the point.

In particular, the attitude, and sometimes the actual words, of the foreign visitors and enquirers expressed undiluted admiration. In fact, the general consensus of opinion seems to be that it was the finest aero show ever held in the world.

In the first place, and this is not an unimportant point, the æsthetic effect was good. On entering Olympia the eye was immediately pleased. The contrast between large exhibits and small ones was agreeable. The silvery white colour of the large aeroplanes had a refreshing effect as one came in from the glaring sunshine. The stands were spacious, aeroplanes and engines not occupying all the standing room as motor-cars must do. At the same time we do not claim that the general appearance of the halls could not have been improved. We British are not such artists in that respect as are the French and some other nations. More might have been done in the way of backgrounds to throw up certain exhibits, and someone made the suggestion that it would have paid the S.B.A.C. to engage a theatrical producer to deal with the spectacular effect of the hall. Still, though not quite perfect, the effect on the eye was distinctly good.

In the second place, this exhibition was full of ideas. In design and construction there may be discernible a common British practice. But ideas are individual, and there was scarcely a stand on which one could not read the ambitions of the firm which occupied it. Our thoughts inevitably go back to the

exhibition of 1920, when, just free from the war, firms were beginning to formulate ideas of what an aeroplane ought to be. It was a very interesting little show, that of 1920, because every exhibit represented an attempt to grapple with one of the problems which then beset the aeronautical path of progress. In 1929 some of those earlier efforts seem crude and amateurish, but if a beginning had not been made there would have been no progress. Now, not a few of those problems have been solved; but we must not, and we do not, yet stand still. This year there were shown many machines which represented achievement: the boat which travelled all round Africa, the monoplane which flew non-stop to India, the racer which achieved 319 miles an hour, and so on. These machines were one distinct and highly creditable feature of the exhibition. Yet even more fascinating were those exhibits which looked towards the future. The Gloster Survey machine, with its glorious disregard of ton-mile considerations, marks a new advance. It is the first of a type which will of necessity be much developed in the future, a type which (we hope we may be allowed to say) will be utterly useless in war. We welcome, too, the Westland monoplane with three light engines. That is a type which FLIGHT has in the past advocated, especially for Dominion airways. It has arrived at last, and it, too, will be further developed. All the new types of flying-boat are looking towards the future, the Blackburn Nile and the Saunders Cutty Sark each catering for some future demand. Nor must we forget the Blackburn model of a future flying-boat with six Rolls Royce 11 engines, which we hope to see flying in a couple of years or so. That shows big ideas of the right sort. In the class of landplane liners the Handley Page firm had a "mock-up" of a forty-seater with four engines, another example of looking ahead. We could mention many more, but these examples will serve to show that the British aircraft firms are no more standing still than they were in 1920.

It is still too soon to estimate with any sort of accuracy the effect of this show upon the public. One cannot judge altogether by the attendance figures, They were not at all unsatisfactory, but undoubtedly they could have been very greatly increased had the S.B.A.C. spent a moderate additional sum upon advertising. They did not quite spoil the ship for a hap'orth of tar, but they almost risked doing so. There was no comparison between

♦

Air War in Canada

War has been declared by the Canadian Government on the spruce bud worm. Aircraft are to be the principal arm of the service. 'Planes are fitted with pontoons because the wide expanse of territory over which they will operate has no improved airports, but possesses thousands of small lakes upon which safe landings may be made. Each carries 1,600 lbs. of powder. Flying low over the tree tops, this powder is dusted among the enemy, and the spruce bud worm soon gives up the unequal fight. Canada has 600,000,000 acres of forest lands, large areas of which are now protected from fire and disease by airplane patrol.

Canadian Air Mail

THREE important commercial aviation companies in Western Canada have united to make a bid for the trans-Canada air mail contract, according to an announcement made by Capt. Fred R. McCall, managing director of the Great Western Airways, Ltd., Calgary, one of the principals in the merger, the other two companies being the Commer-

the advertising of this exhibition and the annual advertising of the R.A.F. Display. One had to look for the former; the latter always hits one in the

The propaganda of such an exhibition should be divided into two categories, perhaps into three. In the first place, buyers, mainly foreign buyers, are needed. In the second place, general air-mindedness should be spread throughout the population. And the third category may be stimulating the interest of young British folk who are already somewhat interested—the sort of people who are thinking about learning to fly, or at least would like to do so if circumstances permitted. The advertising was sufficient to attract the first and the third class, and so far as we could judge, it did attract them. The second class, which includes no buyers and probably only a few future passengers, but which produces good takings at the turnstiles, could only be brought in in its tens of thousands by effective advertising, for which, almost certainly, it would have paid. We maintain that it would have been well worth while to attract that class to Olympia. Aerial transport will not really have arrived until that class accepts it as an ordinary and reasonable thing, and not a "stunt" to call for flaring headlines in sensational papers.

So, while the people at the turnstiles were only moderately contented, on the stands we found everywhere an atmosphere of cheerful satisfaction. No one was so wild as to expect to sell dozens of aeroplanes over the counter. It will be quite good enough if the orders mature six months or a year hence. That the orders will come does not seem at all problematical.

Finally, the exhibition had a delightful social side. We do not mean only the banquets and luncheons. Everyday for a fortnight the whole aeronautical fraternity was gathered together under one roof, as they used to be each year at Itford and Lympne. Friends met friends on all sides, all in cheerful mood, and the foregatherings were of the cheeriest. Shop was talked ad lib., ideas were exchanged, rivals chaffed each other, and everyone felt the better and the fresher for it. It has been a very great and very enjoyable exhibition, an effort which redounds to the credit of all concerned in its promotion and organisation. Possibly the holding of a purely civil aviation and private flying exhibition might well be considered as a sound proposition in the year 1931.



cial Airways, Ltd., Edmonton, and Commercial Airways, Ltd., Regina. Arrangements have already been made for financing the Dominion Mail contract. Great Western Airways is the name of the new organisation which, it is stated, will be under the management of Sqdn.-Ldr. J. H. Tudhope, who is at present supervisor of airports and airways for the Dominion Government. Mr. H. A. Oaks, prominent in development of commercial aviation in Canada as original organiser and managing director of Western Canada Airways of Winnipeg, and at present managing director of Northern Aerial Minerals Exploration Company, operating in Northern Canada, is on the provisional board of directors, which includes representatives of the three companies concerned.

Bullion by Air

IMPERIAL Airways established a new record for carrying bullion between London and Paris during last week. Over a period of 9 days 40 tons of gold, valued approximately at £5,000,000, was flown across the Channel. It represented the bulk of the withdrawals which have taken place from the Bank of England.

TWENTY YEARS AFTER

Louis Bleriot Flies the Channel Again

Then-

It was almost without warning, but nevertheless with a send-off on the French shore from an enthusiastic crowd, that M. Bleriot flew across the Straits of Dover from Les

Baraques, near Calais, to North Fall Meadow at Dover, on Sunday, July 25, 1909, thereby incidentally winning the Daily Mail £1,000 prize. Taking the week-end as a whole, it had been one of the windiest periods of a particularly unsettled summer, and the previous day in particular, seemed hopeless for any cross-Channel flight. Half a gale had indeed been blowing, and a heavy sea running only a few hours before, and hence it is hardly to be wondered at that the feat was as totally unexpected as it was.

When this greatest of all great events in the annals of modern history was taking place the world and his wife were mostly abed, especially this side of the Channel. But M. Bleriot had got up at half-past two in the morning, not feeling very well, had taken a short motor run just to blow the cob-webs away, and that was why he was able to snatch the one brief moment that presented itself between the daytime storms of Saturday and Sunday. Seeing that the fates were propitious, he then lost little time in bringing out the flyer, and in spite of his injured foot he quickly carmed out a practice flight over the sand-hills between Les Baraques and Sangatte. A

httle earlier, too, he had notified his intention to start to the destroyer "Escopette," which was consequently at that time standing out to sea, with Madame Bleriot and others

already aboard—all anxiously on the look-out for him. Finding everything working properly with his machine, he speedily effected a fresh start, this time flying straight away over the cliffs and heading towards England.

That was about 4.40 a.m. (French time), and it was about 5.20 a.m. (also French time) that he landed at Dover. Accounts differ as to the exact moment of departure and descent, and as a matter of fact it is doubtful if any reliable timing was made, since M. Bleriot started without a watch as well as without a compass. The distance of the flight was about 31 miles, and hence the speed was in the region of 45 miles an hour. During the crossing he flew at an altitude of 150 ft. to 300 ft., and thus kept much nearer the water than Mr. Latham did on his attempt.

M. Bleriot's monoplane quickly outstripped the torpedo-boat destroyer "Escopette." In mid-Channel M. Bleriot lost sight of land and of his escort for a very uncomfortably long period—estimated by him to have been 10 mins.—and was entirely without means of ascertaining his proper direction. In the circumstances he did the only thing possible, which was to keep straight on, and fortune favouring him, he sighted the English shore off Deal while heading for St. Margaret's Bay. Turning along the coast, M. Bleriot of the

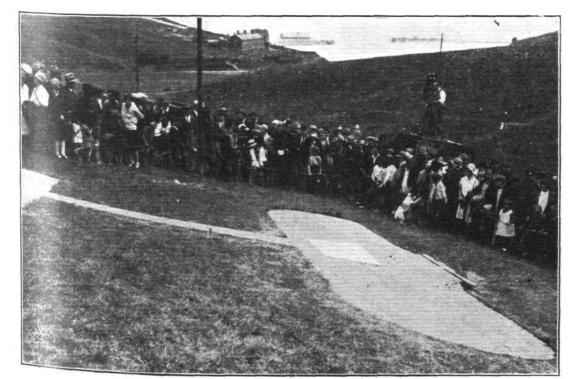
nding on the spot where ars ago. ("FLIGHT" Photo.)

at a gap in the cliffs where a representative of Le Matin,
M. Fontaine, was signalling to him with a tricolour flag.

The site on which the landing was accomplished was the



M. and Mme. Bleriot standing on the spot where M. Bleriot landed twenty years ago. ("Flight" Photo.)



The Bleriot Memorial, erected by Mr. Alexander Duckham, which marks the spot where Bleriot landed after crossing the Channel on July 25, 1909. He came in from the Channel through the gap in the hills shown at the top of the picture.

("FLIGHT" Photo.)



TWENTY YEARS AFTER: On July 27 M. Bleriot again flew the Channel, this time in the latest type of Bleriot monoplane, to celebrate his historic flight on July 25, 1909. Our picture shows the crowd around the machine after he landed at Swingate, Dover; he is standing on the machine with the Mayor of Dover. Inset, the machine arriving.

North Fall Meadow. Although the arrival was noticed from afar by several, and M. Fontaine was on the chosen part of the cliff at Dover, yet even he failed to see the real landing, and P. C. Stanford was the only eye-witness of this great historic event, the landing on British soil of the first flyer to cross the Channel.

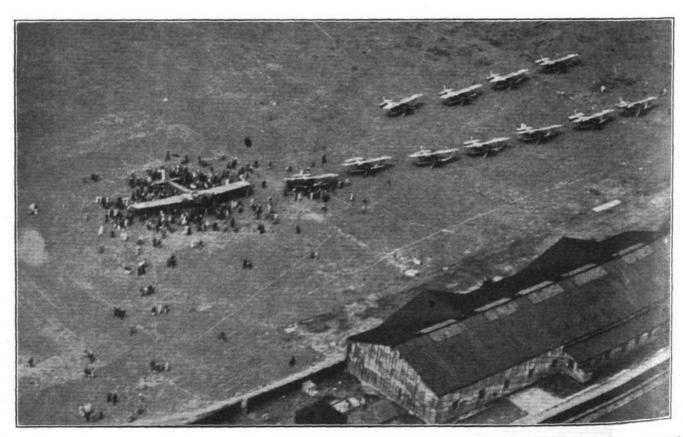
The actual contact with terra-firma was rather abrupt; in fact, not only was the propeller broken, but that part of the framework which carried the engine was also damaged. Mishaps of this sort, however, are absolutely negligible by comparison with the success of the main issue. Bleriot had crossed the Channel, had won the *Daily Mail* prize, and

was none the worse for it, nor in all probability would his machine have been damaged had he been familiar with the site on which he was forced to alight.

-And Now

On Saturday last, July 27, M. Bleriot once again flew across the Channel from France to England, in order to be present at the Twentieth Anniversary Celebrations in this country in honour to the Pioneer's historic crossing—M. Bleriot was unable to come on July 25, the actual anniversary, owing to engagements in France.

In contrast to his first crossing, M. Bleriot flew as passenger

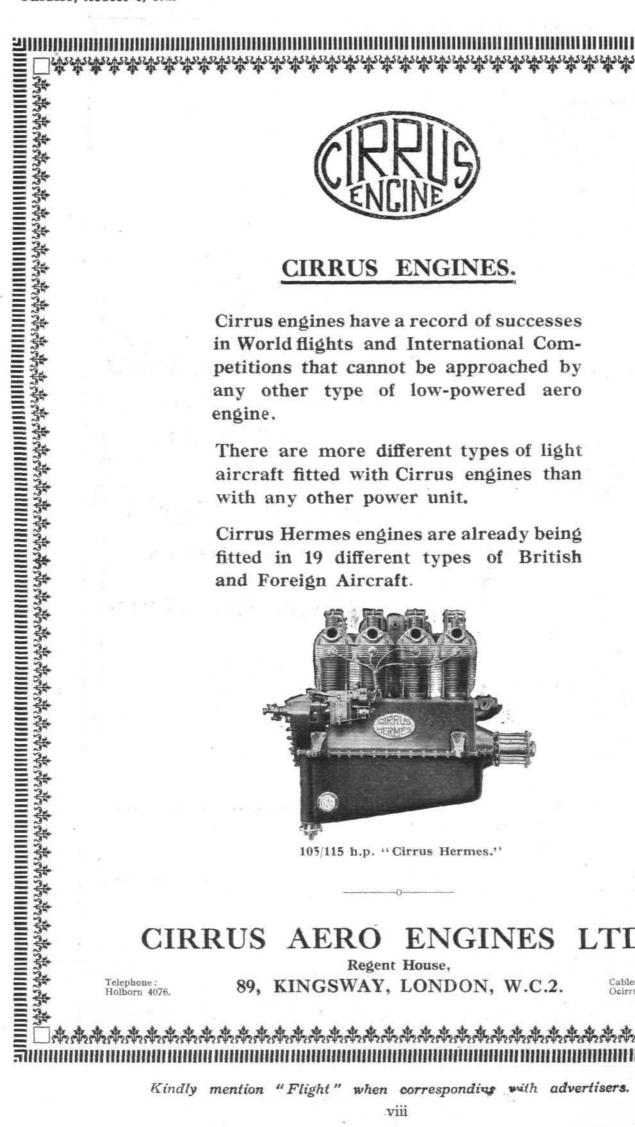


THE SECOND CHANNEL CROSSING: An aerial view showing the Bleriot monoplane, in which M. Bleriot crossed the Channel on Saturday, immediately after landing at Swingate, Dover. The R.A.F. escorting machines are seen alongside.



Save time by using the Air Mail.





in one of his large twin-engined military type " 127" monoplanes of 1,000 h.p., piloted by M. Boussotrot, with M. Begot as navigator and M. Schmidt as mechanic. Mme. Bleriot as navigator and M. Schmidt as internance. Mine. Bjeriot also flew to England, in another machine, and was at Dover to greet her husband when he landed. There were several thousand people assembled at Dover to welcome M. Bleriot, and a squadron of R.A.F. machines (No. 4) flew out to meet him over the Channel. Owing to the mist, however, these only located the large Bleriot monoplane near the cliffs of Dover.

M. Bleriot took some 12 minutes to cross the Channel this time, and when he arrived at Dover, a few minutes before schedule, he flew over the spot where he landed 20 years ago, and then descended at Swingate Aerodrome nearby, at 2.15 p.m. Here he was greeted by the Mayor of Dover, Alderman H. E. Russell, the French Consul at Folkestone, Sir Sefton Brancker, and Mr. and Mrs. Duckham.

Then, after the party had examined the machine, M. Bleriot put on his straw hat and they all proceeded to the Memorial (erected by Mr. Alexander Duckham) in North Honour at the Seventh International Aero Exhibition Banquet at the Savoy Hotel, where they received a great reception, Lord Thomson, on behalf of the Daily Mail, presenting Mme. Bleriot with a diamond brooch as a memento of the great flight. The proceedings at this Banquet are dealt with elsewhere in this issue, so we need say no more

On Sunday M. Bleriot returned to Calais by air, accompanied by Sir Sefton Brancker and the Master of Sempill. At Calais there were further celebrations in honour to M. Bleriot. It may be added here that on the return flight the large Bleriot monoplane was met by a replica of the original Cross-Channel Bleriot, which escorted him to Calais and landed alongside—a strange contrast of past and present. On Monday, July 29, M. Bleriot returned to London and delivered a lecture before the Royal Aeronautical Society. At the conclusion of the lecture a most remarkable film was shown dealing with the history of aviation as exemplified in the development of Bleriot machines from 1902 to the



M. Bleriot makes a speech at Dover, after his anniversary flight across the Channel on Saturday last. In the group are the Mayor and Mayoress of Dover, and Sir Sefton Brancker. ("Flight" Photo.)

Fall Meadow, where a civic reception was held. Speeches were made by the Mayor, and Sir Sefton Brancker, and M. Bleriot replied in French. Meanwhile, it was learned from Paris that M. Bleriot had been promoted Commander of the Legion of Honour.

Returning to Swingate, M. Bleriot continued his journey in his big monoplane to Croydon—Mme. Bleriot also flying there in the other machine. At Croydon large crowds gathered to greet M. Bleriot, who arrived shortly before 5 p.m. He was received by Lord Thomson, and, once again, by Sir Seften David Pritish Sefton Brancker, Sefton Brancker, and many representatives of British aeronautics, including Air Vice-Marshal Sir Vyell Vyvyan, Brig.-Gen. P. C. R. Groves, Col. the Master of Sempill, Lieut. Com. H. E. Perrin, Capt. P. D. Acland, Sir Samuel Instone, Mr. G. Woods Humphery, Lieut. Col. G. Burchall, Mr. F. Mr. G. Woods Humphery, Lieut.-Col. G. Burchall, Mr. F. Handley Page, and M. Breguet. Lady Bailey also flew out to meet M. Bleriot. to meet M. Bleriot. A word of congratulation here to Major Myers, who was responsible for all the organisation of the Anniversary Celebrations.

In the evening M. and Mme. Bleriot were the Guests of

Special Exhibition of Aircraft Models

A SELECTION of the best models of British aircraft from the International Aero Exhibition, Olympia, will be

present day. The film was one which M. Bleriot had put together gradually, and intended mainly for the entertainment of his own family. The principal features in the film were the early evolution of Bleriot types from the small machine with flapping wings to the Bleriot models of 1907, which won the Aero Club's medal. The model Bleriot XI, of 1909, the first to have a wooden body and fabric-covered wings, was the prototype of the modern monoplane, and it was on that type of machine that he crossed the Channel. The film gave pictures of the start of that historic flight, and of the wild scenes of enthusiasm which marked the air-

man's return to his own country.

A full report of M. Bleriot's address before the R.Ae.S. will be found on page 837 of this issue.

In conclusion it should be noted that everyone, at Dover, Croydon and London, was very much impressed by this great Pioneer's modest, cheery and "boyish" manner, and it was obvious to all that both M. and Mme. Bleriot were deeply affected by the reception they received on this side of the Channel.

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on view from August 5 until further notice, in the Royal United Service Museum, Whitehall, S.W.1. Opening hours on weekdays are 10 a.m. till 5 p.m.

A MODERN SINGLE-SEATER FIGHTER



THE WESTLAND WIZARD II: A! high-wing monoplane, fitted with a Rolls-Royce "F" Type engine.

(See also p. 819.) ("Flight" Photo.)



The following achievements prove the amazing efficiency of every Napier aero engine.

SPEED: The highest speed ever attained in the air was achieved by Flight-Lieut. D'Arcy Greig, flying a Supermarine-Napier seaplane—speed 319.5 m.p.h. This same machine, piloted by Flight-Lieut. Webster, won the Schneider Trophy in 1927. The engine was a NAPIER.

RELIABILITY: The greatest reliability flight ever accomplished was carried out with NAPIER engines. Four Supermarine-Napier flying boats flying in formation flew from England to Australia and back to Singapore— 180,800 engine miles without mechanical trouble.

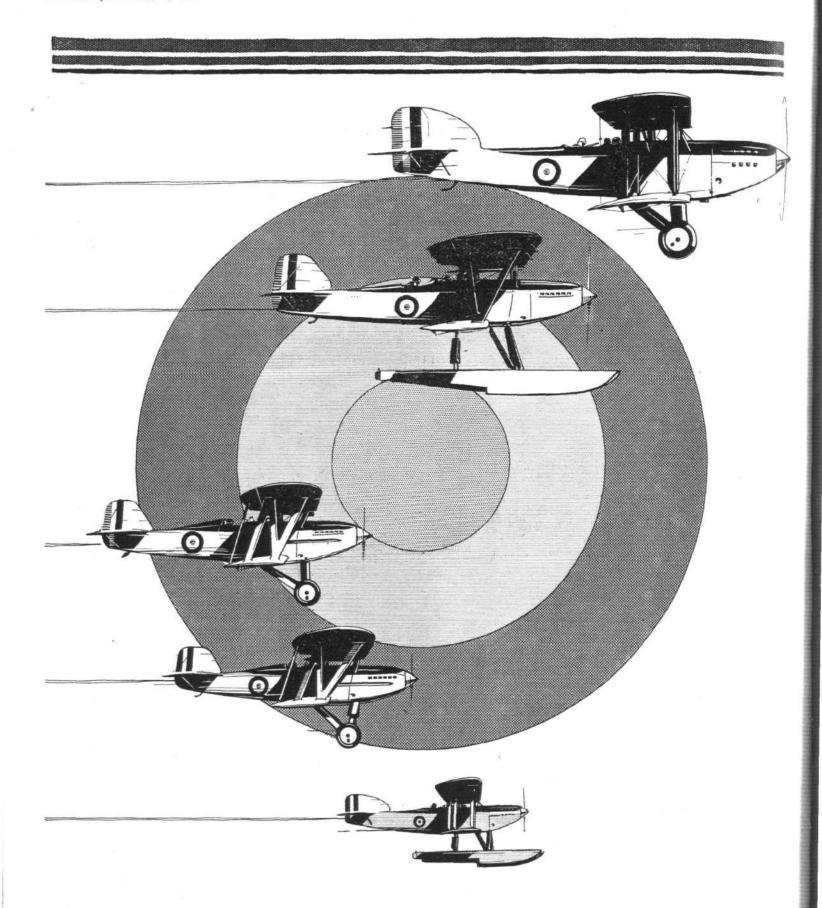
ENDURANCE: The first nonstop flight from England to India was carried out with a Fairey monoplane, fitted with NAPIER engine, piloted by Squadron-Leader A. G. Jones-Williams, M.C., and Flight-Lieut. N. H. Jenkins, O.B.E., D.F.C., D.S.M. A distance of 4,130 miles was covered in 50 hrs. 38 mins.

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A MODERN SINGLE-SEATER FIGHTER



THE WESTLAND WIZARD II: Two more views (see p. 818) of this machine, piloted by Capt. Louis Paget.

Note the exceptionally clean lines.

INTERNATIONAL LIGHT 'PLANE TOUR OF EUROPE

Over Eighty Machines Entered

least twelve countries will be represented in the International Light 'Plane Tour of Europe, organised by l'Aero-Club de France, which commences on August 3 from the French aerodrome at Orly, south of Paris.

At least 82 light 'planes are expected to start. The course, as our map traces, touches most of the capitals of Europe and extends as far north as Hamburg, as far southeast as Bucharest, and as far south as Marseilles. Each tourist is scheduled to arrive back at Orly on the last stage from Brussels on August 20.

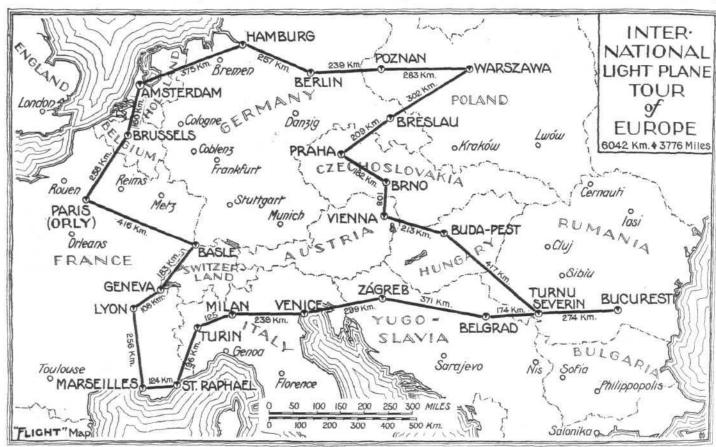
Germany has entered 34 machines, Italy 14, England 4, France 28, Czecho-Slovakia 4, Belgium 2, Switzerland 2, and

compete with Avia B.H.11 Antelopes-the little low-wing monoplanes that have done so well in other air events.

Germany will use many BFW-M23 low-wing monoplanes. They are two-seater types, adaptable to the Armstrong Siddeley "Genet" or A.B.C. "Scorpion" or Mercedes Benz engines. Another German type is the Klemm monoplane, which is more familiar to our readers. Switzerland is entering two Klemms. Italy has sent many Breda machines

as well as Fiats and Caproni types.

The touring competition will be for the Coupé Challenge, valued at 20,000 francs, offered by the French Aero Club, and other prizes have been contributed by different countries entered. Competing whom competitors have through



The competing machines in this European Tour will fly an anti-clockwise course from Orly, near Paris, so that they will pass outwards over Switzerland and return over Belgium.

Jugoslav 2, whilst Brazil, America, Austria and Canada will each have one competitor—entered through a European Aero Club.

Great Britain will be represented by Lady Bailey, Miss Winifred Spooner and Capt. H. Broad on Gipsy-Moths, and by another competitor on the Simmonds "Spartan," probably the Simmonds test pilot, Mr. C. Staniland.

It is interesting to note that two Autogiros will probably compete, for they have been entered by Señor de la Cierva Weymann. Amongst the French pilots is the wellknown Maurice Finat, who usually flies a Caudron, but is scheduled to pilot a Potez in the Tour. French machines will include many Caudrons, Potez and Albert high-wing monoplanes, most of which have contested the Light 'Plane Trials held at Orly in recent years. Czecho-Slovakia will

machines must conform to one of two categories. first category their weight empty must not exceed 880 lbs., and in the second category 616 lbs. During the tour a pilot must not be exchanged, but the passenger may be exchanged if the minimum age limit of 16 years is still complied with. plied with. Points will be awarded apart from the result of the tour, as for instance, for the standard of construction of the machine, comfort of crew, choice of flying instruments, installation of parachutes, protection against fire, disposition of dual control, design of the undercarriage, etc. There will also be a test of fuel consumption for which additional points will be won. This will be carried out by all competitors on the same day between August 4 and 9, and, if possible, at the same hour, on a closed circuit of approximately 31 miles and over a total distance of 186 miles.

MANCHESTER-LIVERPOOL INTER-CITY AIR RACE

THE list of entries for the Inter-City Air Race, to be held on August 10 between two teams of pilots representing Manchester and Liverpool, has now been closed. Manchester is to be represented by three private owners: Miss W. Brown, Mr. J. C. Cantrill, and Mr. E. Cohen. All of these will fly Avro "Avians." Liverpool has two entries from the Liverpool Aero Club, and one private owner, Mr. T. H. Naylor. Pilots for the club machines will be Flight-Lieut. Allen and Mr. A. Mousdale. They will use an Avro "Avian" and D.H. "Moth."

The race starts and finishes at Wythenshawe Aerodrome, Northenden, there being a stop at Liverpool of 1 hr. During

the afternoon and evening there will be an Air Pageant at Wythenshawe, starting at 3 p.m. The public will be charged

Is. admission.

This Inter-City Race is for a trophy presented by Sir William Cundiff, an ex-Lord Mayor of Manchester, for competition between two teams of pilots representing Liverpool and Manchester. Each pilot must be resident within 20 miles of either city, and the aircraft must be standard light aeroplanes, with no "faking" or special streamlining, Top alterations of any sort are allowed.

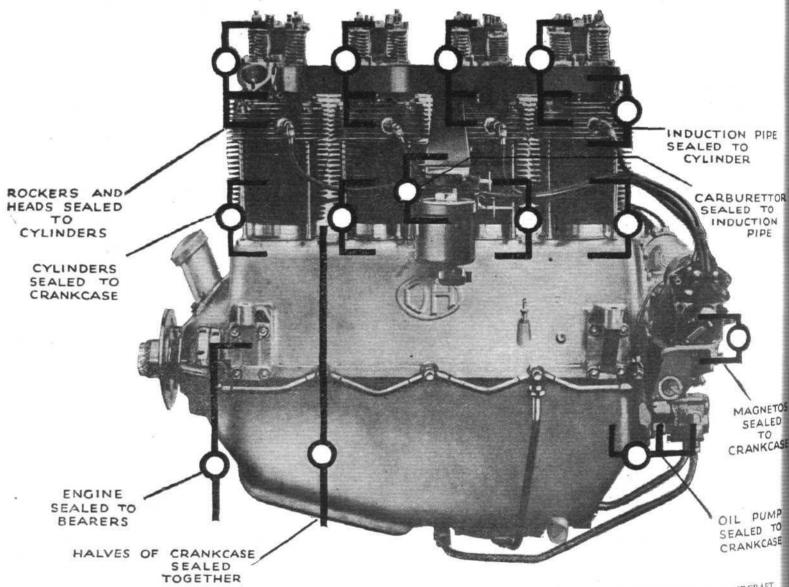
Each machine will be handicapped at Wythenshawe. The total distance of the race is about 60 miles.

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In addition, running up and taxying have acnunted for a further 433 hours running. Except for routine cleaning of filters and lugs, the checking of valve clearances and the correction of a minor defect in one magneto, no attention of any kind has been given to the engine.

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Climb at full load to 10,000 ft. Time 21 mins.

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Height 800 ft. A.S.I. 98

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Home 1 m. 48s. 117.7

AVERAGE CONSUMPTION

Petrol 19½ m.p.g. (4.5 galls. per flying hour) Pratts No. 1.

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"MOST STRIKING TEST OF RELIABILITY IN FLYING HISTORY"



HISTORY AND PROGRESS OF AERONAUTICS

Air Ministry and Royal Aeronautical Society Exhibits at Olympia

SELDOM has there been collected together such a vast array of information on aeronautics as a whole as was to be seen in the combined exhibits of the British Air Ministry and Royal Aeronautical Society at the Olympia Aero Show just closed. Occupying the whole of the gallery of the new building, these exhibits gave us the history—as near complete as possible—of aeronautics, mainly in so far as Great Britain is concerned, from the earliest times of man's endeavours to fly up to the present day, at which point we were shown the results of those efforts in the successful attainment of a new and highly technical science. Or, as it was rather aptly put by Mr. Howard Flanders (who kindly conducted us over the R.Ae.S. and Inst.Ae.E. exhibits), one saw how man thought of flying for some 2,000 years, and then how he actually accomplished flight in a practical way during the subsequent half century.

subsequent half century.

We feel that the real value of this "Exhibition within an Exhibition" was not fully appreciated by the visiting public, for—like the Sculpture Hall at the Royal Academy, where some of the finest examples of man's art are always to be seen—they appeared to use this section mainly as a place of rest or for a hurried walk through. We feel also that this wonderful collection of aeronautical history and progress should, somehow or other, be maintained as a permanent exhibition. A difficult problem, it must be admitted, as many of the exhibits are privately owned, except in the case of the

Air Ministry models.

However, let us proceed with our review of the exhibits. These were arranged so that one could follow the story in a series of chapters. Commencing with the Air Ministry section, we could examine, by means of models, the progress of flight, from the early ideas of 1670 to 1846, the pioneers of aviation, 1892-1909, and up to the progress of present-day aeronautics, 1912-1929. Having thus obtained a general and optical description of the conquest of the air, the visitor could then complete the story by viewing the other Air Ministry stands, which showed how this conquest was maintained and improved. Or he could—as we did—amplify the various stages of the conquest (as shown by the models) by proceeding to the R.Ae.S. exhibits, where the early history and first stages of practical flying were set out in detail, and then with a complete knowledge of the History of Aeronautics before him, return to the other Air Ministry exhibits. Thus, the combination of the two provided the complete story.

In the following notes, we give a description of the exhibits, commencing with those of

The British Air Ministry

The models were artistically arranged in a natural setting, being suspended above a realistic landscape in a blue sky, along a corridor extending the full length of one side of the gallery. These models—which were beautifully constructed to a uniform scale of half-an-inch to the foot—comprised the following:—

1670. A flying-boat designed (but not constructed) by Francesco Lana. 1873. Montgolfier's (Joseph and Etienne) hot air balloon, of 60,000 cu. m. 1809. Sir George Cayley's

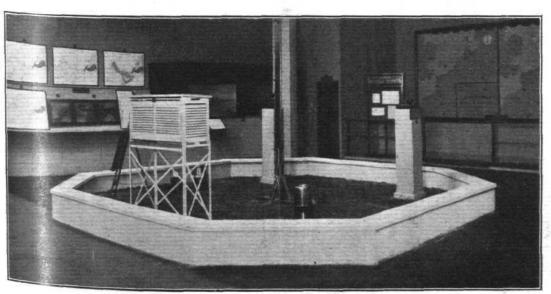
flying-boat, combining the helicopter and aeroplane principles. Designed, but not constructed. 1816. Another of Sir George Cayley's prophetic designs, a navigable balloon. A navigable balloon designed (but not constructed) by Mr. Panley and Mr. Egg. 1843. William Samuel Herson's Aerial Carriage. A design which embodied many features of the modern aeroplane. 1846. John Stringfellow's monoplane; the first power-driven heavier-than-air machine to fly. 1892. Otto Lilienthal's glider. 1896. P. S. Pilcher's glider. 1903. Wright Bros.' biplane, on which the first human glider. 1903. Wright Bros. Diplane, on which the first human flight, in a power-driven aeroplane, was accomplished on December 17, 1903, at Kitty Hawk. 1908. A. V. Roe's biplane, with 9-h.p. J.A.P. engine, on which he made a short flight at Brooklands on June 8, 1908. 1909. S. F. Cody's Army biplane (50-h.p. Antoinette). H. Farman, on March 3, 1909, made a flight of 4 hrs. 18 mins. duration at Mourmelous abiplane. The model shown here, we have to point out. Army biplane (50-h.p. Antoinette). H. Farman, on March 3, 1909, made a flight of 4 hrs. 18 mins. duration at Mourmelon on a biplane. The model shown here, we have to point out, was not this machine, but a Maurice Farman "Longhorn" of a later period. A. V. Roe's famous triplane, with 9-h.p. J.A.P. motor-cycle engine. Louis Bleriot's monoplane (25-h.p. Anzani), on which he crossed the English Channel, on July 25, 1909. 1912. The Short tractor biplane (100-h.p. Gnome). 1913. The Sopwith "Bat" boat (90 h.p. Austro-Daimler engine). The Sopwith "Tabloid" single-seater tractor biplane (80 h.p. Gnome). 1914. The Vickers F.B.5 "Gunbus," a two-seater pusher biplane (100 h.p. Monosoupape Gnome) The B.E.2c (90 h.p. "Raf"), designed and built at the Royal Aircraft Factory. The Avro 504 two-seater tractor biplane (80 h.p. Gnome). 1915. The Short type 184 seaplane (225 h.p. Sunbeam). A "Caquot" type captive balloon. 1916. The Fairey IIID tractor seaplane (360 h.p. Rolls-Royce "Eagle"). The Sopwith "Camel" (150 h.p. B.R.1). The R.E. 8 (150 h.p. "Raf"), a tractor biplane of R.A.F. design. The F.5 flying-boat (two 400 h.p. "Liberty"). 1917. The Bristol Fighter (275 h.p. Rolls-Royce "Falcon"). The D.H.9 (240 h.p. Siddeley "Puma") two-seater tractor biplane. The S.E.5 (180 h.p. Wolseley "Viper"), single-seater fighting scout. The Handley Page (1400 (two 350 h.p. Rolls-Royce "Eagle") heavy (230 h.p. "B.R.2"), single-seater fighting scout. The Handley Page O/400 (two 350 h.p. Rolls-Royce "Eagle") heavy night bomber. The Supermarine "Seagull" (450 h.p. Napier "Lion") amphibian flying-boat. The Vickers "Vimy" night bomber. The Supermarine "Seagull" (450 h.p. Napier "Lion") amphibian flying-boat. The Vickers "Vimy" (two 375 h.p. Rolls-Royce "Eagle") long-distance bomber.

1920. Blackburn "Dart" (450 h.p. Napier "Lion"), decklanding torpedo biplane. Avro "Aldershot" (Beardmore "Typhoon") heavy bomber.

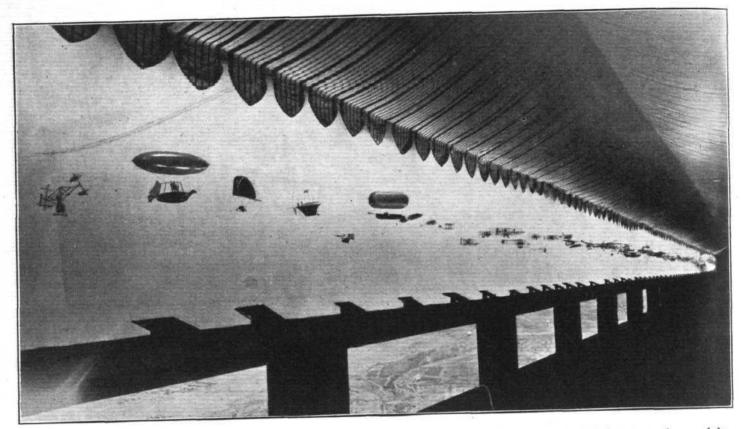
1921. Fairey "Pintail" (450-h.p. Napier "Lion"), twin-float amphibian tractor biplane, Gloster "Bamel" (550 h.p. Napier "Lion") racing biplane.

1922. Vickers "Victoria" (two 450 h.p. Napier "Lion") troop-carrying biplane. Fairey "Fawn" (450 h.p. Napier "Lion") tractor biplane for day bombing. Blackburn "Fleet Spotter" (450 h.p. Napier "Lion"), deck-landing reconnaissance tractor biplane.

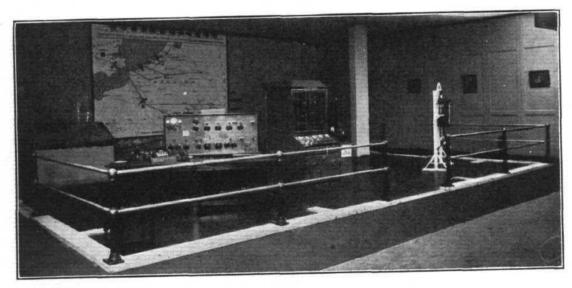
1923. Armstrong-Whitworth "Siskin III" (400 h.p. Siddeley "Jaguar") single-seater fighter. Boulton and Paul, Boulton (two 450 h.p. Napier "Lion") all-metal high-speed bomber. De Havilland "D.H. 53" (6 h.p. Blackburne "Tom Tit")



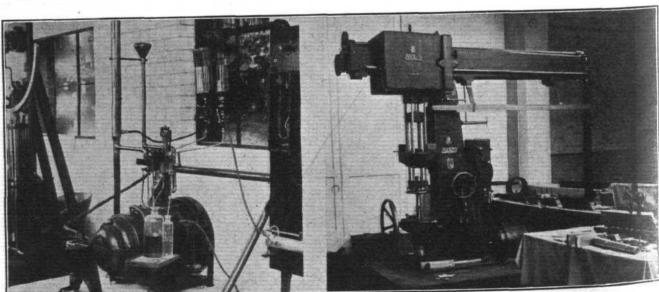
The Air Ministry at Olympia: The Meteorological Office exhibit.



THE PROGRESS OF FLIGHT: One end—the beginning—of the corridor of Air Ministry scale models, dating from 1670. (See also next page.)



The Air Ministry at Olympia: The Wireless Exhibit.



THE A.I.D.: On the left the fuel testing apparatus and, on the right, the Avery testing machine for metals.



INTERNATIONAL

Captain Hubert Broad flying a Gipsy Moth fuelled with Pratts High Test Petrol won this sensational event at Heston Aerodrome on July 20.



In aerobatic work, pilots cannot afford to take chances with petrol. Reliability of fuel is of paramount importance. Hence the choice of Pratts High Test.

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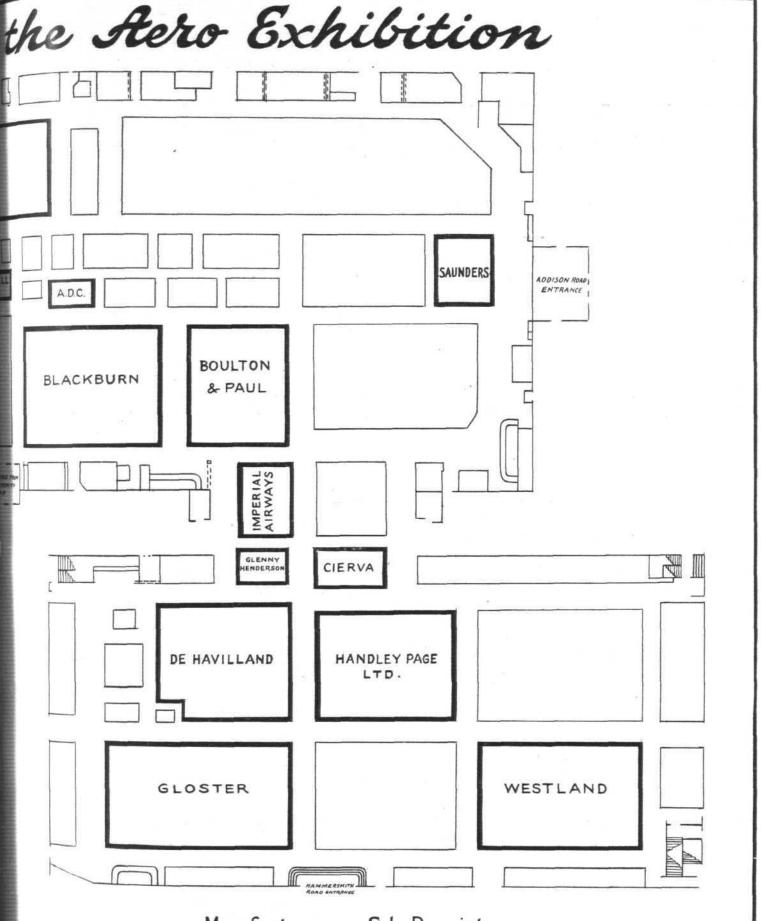
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AERO EXHIBITION OLYMPIA, 1929

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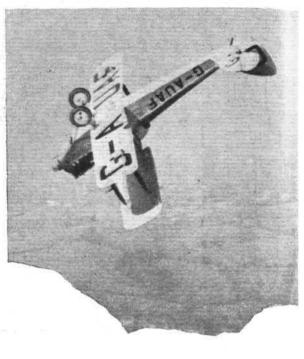
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ALL ROUND **EXCELLENCE** OF MOTH ENDORSED AT HESTON



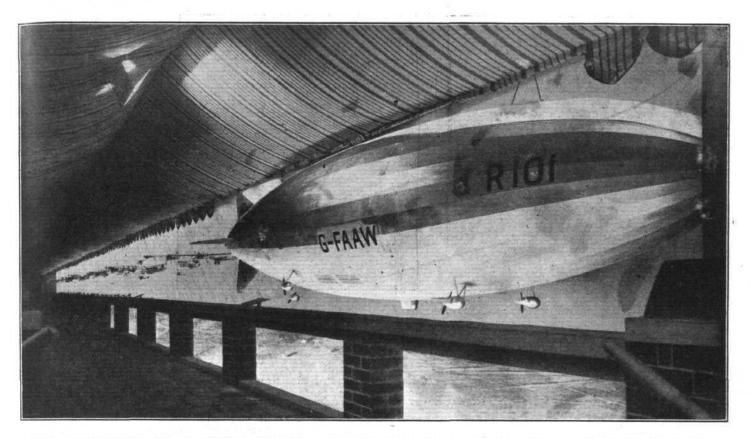
INTERNATIONAL

AEROBATIC CONTEST Aerobatics test the qualities of a machine in all departments -speed, climb, manoeuvrability and general robustness. The International Aerobatic Contest, organised by the Royal Aero Club, on July 20th at Heston Air Port, was won by Captain H. S. Broad, A.F.C., flying a Gipsy Moth. Mr. G. Murray, also on a Moth, took second prize. Inverted flying figured largely in Cap-

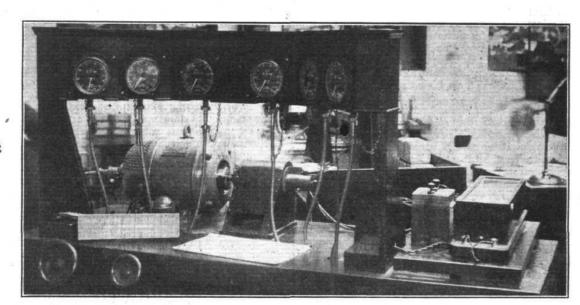
tain Broad's programme which provided a convincing demonstration of the Moth's all-round strength of construction.

GIPSY MOTH FIRST

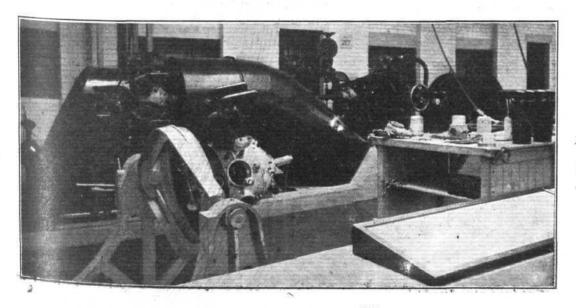
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THE PROGRESS OF FLIGHT: The other end of the corridor of models, showing H.M. Airship R.101, the latest stage of aircraft development.



The A.I.D.: Testing Jaero instruments.



The A.I.D.: The testing plant for aero engines.



The Air Ministry at Olympia: The Reid Apparatus on the Directorate of Medical Services Stand,

light single-seater low-wing monoplane. De Havilland "D.H. 50" (240-h.p. Siddeley "Puma") 4-passenger commercial biplane. 1924. Handley Page "Hamilton" (one 360 h.p. Rolls-Royce "Eagle" and two 240 h.p. Siddeley "Puma" 10-passenger commercial biplane. 1927. Fairey "Flycatcher" (385 h.p. Siddeley "Jaguar"), single-seater fighter biplane. Armstrong-Whitworth "Argosy" (three 385 h.p. Siddeley "Jaguar") 20-passenger commercial biplane. Westland "Wapiti" (400 h.p. Siddeley "Jaguar") two-seater general-purpose biplane. Blackburn "Iris" (three 650 h.p. Rolls-Royce "Condor"), coastal patrol and reconnaissance flying-boat. Gloster "Gamecock II" (450 h.p. Bristol "Jupiter") high-performance single-seater fighter. "Gloster IV" (700 h.p. Napier "Lion") racing biplane seaplane. Supermarine "S.5" (875 h.p. Napier "Lion") racing mono-seaplane, winner of the Schneider Trophy. Supermarine "Southampton" (two 450 h.p. Napier "Lion"), metal-hull reconnaissance flying-boat. Fairey III.F (530 h.p. Napier "Lion"), three-seater all-metal fleet reconnaissance land or sea biplane. 1928. Fairey "Fox" (480 h.p. Rolls-Royce "Falcon") high-speed day bombing biplane. Avro "Avian" (85 h.p. "Cirrus"), two-seater light biplane. Short "Calcutta" (three 525 h.p. Bristol "Jupiter IX"), all-metal 15-passenger commercial flying-boat. De Havilland "Moth" (100 h.p. D.H. "Gipsy"), two-seater light biplane. Simmonds "Spartan" (85 h.p. "Cirrus") two-seater light biplane. Simmonds "Spartan" (85 h.p. "Cirrus") two-seater light biplane. Armstrong-Whitworth "Atlas" (524 h.p. Siddeley "Jaguar") two-seater general-purpose biplane. Vickers "Velore" (485 h.p. Bristol "Jupiter"), all-metal freight-carrying biplane. Blackburn "Bluebird IV" (100 h.p. D.H. "Gipsy"), two-seater light biplane. Slackburn "Sydney" (three 540 h.p. Rolls-Royce "Falcon XII") all-metal monoplane flying-boat, now under construction. Short Commercial monoplane seaplane, with three 525 h.p. Bristol "Jupiter IX" engines, accommodating crew of three and 17 passengers. Fairey "Postal "(Napier "Li

Having thus come to the latest in aircraft design, we were able, with the help of the other Air Ministry exhibits, to learn something of the technical, scientific, and practical side of flying. The human element was dealt with on the stand of the Directorate of Medical Services. Here we saw how fitness, etc., for flying was tested, by means of numerous interesting apparatus and instruments.

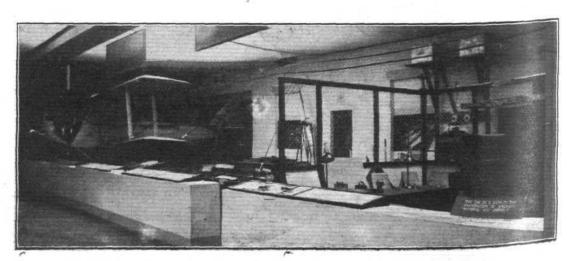
One of these was the well-known Reid apparatus, by means of which the would-be pilot's potential aptitude for the co-ordinated limb movements in flying a machine are tested and recorded. It is an ingenious device, comprising a sort of pilot's cockpit fitted with full controls and various instruments. The apparatus reproduces, by mechanical means, the various movements of an aeroplane in flight, which the "pilot" has to control, the degree of sensitiveness in so doing being recorded.

Eyesight, a vital matter in flying, is also dealt with by this section of the Air Ministry, and on the same Stand were to be seen the various methods and tests employed. An important test was that for visual judgment, known as the "Red-green" test, essential in judging perspective, especially in landing. Other items in which the physical qualities of the pilot were tested, were: lung capacity, respiratory efficiency, blood pressure, nervous stability; for all of which special devices and apparatus are employed.

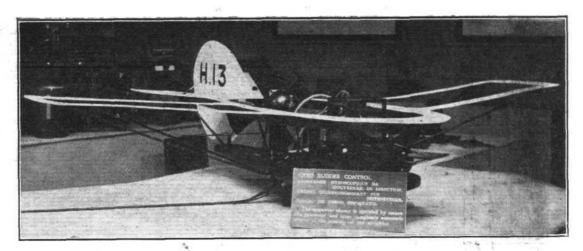
The comfort and care of the pilot when flying under various conditions were catered for by the following exhibits: oxygen apparatus for high-altitude work; electrically-heated suit and goggles; protective sponge-rubber cockpit padding; ear defenders; specially illuminated dashboard, in which the instruments are arranged in groups according to their function, so that the maximum information is obtained in the minimum time.

Having made our pilot fit for flying, we then passed on to the Stand of the Meteorological Office. This was an intensely interesting exhibit, for the weather plays a very important part in flying. The methods employed in forecasting weather and issuing the daily weather reports were displayed, together with the various instruments used, such

The A.I.D.: The final stage of Inspection the complete aircraft, a D.H. "Moth."



The Air Ministry at Olympia: The Gyro Rudder Control on the Directorate of Scientific Research Stand.



as the pilot balloon theodolite (for determining velocity and direction of wind); Dines' pressure-tube anemograph; Besson Nephoscope (for determining angular velocity of clouds); rain recorders and gauges, sunshine recorders, etc. A model aeroplane illustrated how a machine is equipped for taking meteorological observations.

There were also some interesting models showing the meteorological arrangements at the Cardington and Ismailia airship stations, and a typical airport (Lympne) showing arrangements for ground signals. Most fascinating, however, were the three-dimensional models illustrating upper air currents over certain areas at one particular occasion, at 1,500, 3,000, 6,000, 10,000, and 25,000 ft. Replicas of the Croydon weather maps were also exhibited, and in addition there were numerous diagrams and charts.

Equally important to aviation is wireless—in fact, long-distance flying is practically helpless without the combined help of meteorology and wireless. The wireless section of the Air Ministry formed the subject of the next Stand. Here the various functions of wireless in relation to aircraft was comprehensively displayed, including a representative selection of wireless transmitting and receiving sets, instruments, while wireless direction-finding was explained.

So far we saw something of the practical side of flying; the subsequent Stands brought us to the scientific and technical side. The first was that of the Directorate of Scientific Research, which is responsible for the investigations into new methods of solving aeronautical problems, and the discovery of the reasons why existing methods of solution sometimes fail.

It would be hopeless here to attempt to describe the various exhibits on this Stand, for all comprised instruments of a highly scientific character. One group illustrated the means employed for making measurements during flight trials, and included a fuel flow-meter, rate of descent meter, suspended static head, and control movement recorder. A second group consisted of silica manometers, while a third dealt with photographic equipment.

Various instruments were also displayed, such as compasses, altimeters, turn indicators, while an interesting item was the gyro rudder control, the purpose of which is the automatic maintenance of an aeroplane on any desired course without attention by the pilot.

Next we came to the Aeronautical Inspection Directorate, or, as it is more usually known, the "A.I.D."—undoubtedly the most interesting of all the Air Ministry exhibits. These illustrated in a small compass the manner in which the A.I.D. carried out inspection, both as regards Service and civilian aircraft. The factors which the A.I.D. regards as essential to render any system of inspection dependable are:

(a) verification, by means of examination and tests, that the whole of the materials, parts, components, and accessories of an aircraft and the completed machine conform to the requirements laid down by the designer and are in all respects sound and trustworthy; (b) linking of the inspectional system from start to finish in such a manner that the work done at each stage in ensuring the correctness of the product is carried forward to the next and succeeding stages, and ensuring that a query arising at any stage as to the previous inspectional operations can be answered and the individual responsible for each such operation identified.

The exhibits were so arranged that the visitor followed the process of inspecting and testing from the raw materials, instruments, accessories, engines and power plant, and finally to the complete aircraft. Thus, the first group included non-metallic materials, such as timber, rubber, adhesives, and protective coatings. Next came metallic materials, examples being shown of ingots, billets, and the final form of steel, also of non-ferrous metals such as aluminium and its alloys, as well as bronze, brass, and copper. Various testing machines, for hardness and tensile, were also on view.

Instruments, accessories and A.G.S. parts came next. Here the methods of testing such important items as carburettors, magnetos, sparking plugs, and the various aircraft instruments were demonstrated, while a selection of A.G.S. parts—details in general use throughout the aircraft industry which have been standardised—was also displayed.

By now the aeroplane was beginning to assume the finished condition, for we next saw the "Aero Engine" section. The first item here was the "view room" where the examination of individual details was carried out and specimens of the gauges and other appliances employed in this work were displayed. Also on this stand was the section devoted to the inspection and testing, first, of certain main components of an engine, and, finally, of the complete engine. In the latter case an Armstrong-Siddeley "Lynx" engine was shown placed on the test stand, connected to a Heenan and Froude dynamometer.

Leaving the engine section, we came to the aircraft itself, first seeing the view room, where individual parts were inspected. The most interesting item here was an X-ray apparatus employed for detecting the presence of hidden defects in aircraft components. Outside the view room one saw the method employed in testing and inspecting airscrews, checking the flow of water through a radiator, while an uncovered wing was displayed showing the various stages of inspection, etc., carried out on same. Finally, a complete aircraft—a D.H. "Moth"—was shown, together with the main essentials in its final inspection prior to flight.

THE DOVAL AEDONALITICAL COCIETY AN

THE ROYAL AERONAUTICAL SOCIETY AND INSTITUTE OF AERONAUTICAL ENGINEERS

A S previously explained, the exhibits of the Royal Aeronautical Society—which was founded on January 12, 1866, and which now incorporates the Institution of Aeronautical Engineers—were mainly concerned with the history of aeronautics in detail.

This was accomplished—and exceedingly well, too—by means of books, manuscripts, engravings, drawings, and photographs, the "story" starting from the earliest times of man's endeavours to fly. Limitations of space rendered it necessary to confine the exhibit mai 'v to the conquest of the air as it developed in Great Britain, but the selection

was nevertheless carefully made with the idea of illustrating the various aspects of the story, both legendary and imaginative, mechanical as well as human, including many, and frequently fantastic, ideas of winged flight, balloons, the parachute and the flying machine or aeroplane. Needless to say, the collection was one of great value and rarity, in which Mr. J. E. Hodgson's unique collection played an important part.

We cannot, it is feared, describe this exhibit as fully as we should like, but the following résumé will, perhaps, give a good idea of the ground—or should we say air?—it covered.



THE ROYAL AERONAUTICAL SOCIETY AT OLYMPIA: A general view of the valuable collection of Books, Manuscripts, and Prints illustrating the early history of aeronautics.

The exhibits were arranged in groups or chapters as follow:—

Early Ideas of Flight, 300 B.C. to A.D. 1780.—Opening with the legendary attempt made by the mythical King Bledud of Britain, and including the references to flight in Johnson's "Rasselas" and Paltock's "Peter Wilkins."

The Invention of the Balloon, 1783.—Montgolfier's hot-air balloon, which first made it possible for man to travel by air. The hydrogen balloon, suggested by Cavendish and invented by the French chemist Charles, and its development.

The First English Aeronaut, James Sadler, 1751 to 1828.—Designed, constructed and piloted his own balloon, his first ascent, in a hot-air balloon, being on October 4, 1784. Some of the exhibits here were lent by Mr. Harold Sadler, a great-grandson of James Sadler.

Some of the exhibits here were lent by Mr. Harold Sadler, a great-grandson of James Sadler.

Charles Green, 1785 to 1870.—The famous Victorian balloonist, who introduced the use of coal-gas, and made over 500 ascents—one, from Vauxhall to Weilburg (Nassau), in 1837, the first long-distance oversea flight in a balloon.

The Father of Aeronautical Science—Sir George Cayley, 1773 to 1855.—Perhaps the most interesting of all the R.Ae.S. exhibits, for this remarkable selection from his papers—exhibited by the courtesy of Sir Kenelm Caley—illustrated the wide range and character of his endeavours, which undoubtedly laid down, for the first time, the basic principles of the dirigible and heavier-than-air machine.

In the latter case, for example, he clearly laid down (in 1809) that the problem of mechanical flight would be solved by the application of power to an inclined plane, and suggested later the idea of the biplane

The First Pioneers of the Aeroplane—W. S. Henson and John Stringfellow, 1840 to 1868.—Henson was the first to produce a design for a power-driven monoplane—the "Steam Carriage"—although it was never constructed on full scale. Stringfellow, who was associated with Henson, constructed a model monoplane which actually flew under its own power.

The Development of the Airship, 1785 to 1924.—The idea of the airship, beginning with the balloon, was here illustrated from the early suggestions for directing balloons—by means of sails, oars, teams of birds, rockets, and other absurd ideas—to the first practical efforts and present accomplishment.

The Development of the Parachute, 1838 to 1919.—
This now important item in the equipment of modern aircraft was not neglected in the R.Ae.S. exhibits, and its development—originating in a primitive invention of Leonardo da Vinci—was also shown. It was first used as a means of descent from a free balloon by the French aeronaut Garnerin in 1797, who was also the first to make a parachute drop in England in 1802. The first Englishman to make a drop was John Hampton in 1837. From this time until the Great War the parachute was mainly used for spectacular

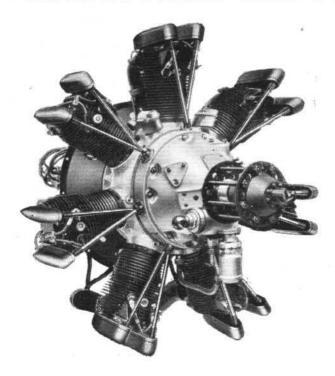
The French contribution to the Royal Aeronautical Society exhibit.





ARMSTRONG SIDDELEY

AN INTERNATIONAL REPUTATION





HE Lynx engine has an international reputation for reliability. Again and again it is chosen against all comers for powering the Commercial aircraft of the principal European Air Lines. It is chosen because it

has proved its durability under the most difficult conditions.

For safe and paying Commercial flying specify the Lynx as used by the K.L.M., Nederlandsche-Indische Luchtvaart Maatschappij, Compagnie Aerienne Francais, Avio Linee Italiane S.A., Ad Astra Aero Schweizerische, Luftver Kehro Ag and Balair Basle Airtraffic Ltd. airlines.

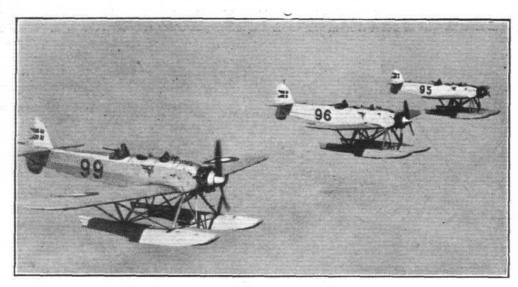
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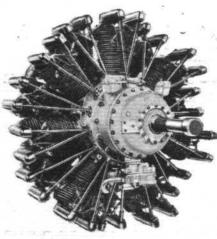
GREAT FLIGHT BY GEARED JAGUARS



FLIGHT of Heinkel seaplanes fitted with 460-500 h.p. Geared Jaguars recently flew from Denmark to Barcelona and back. At the end of the flight it was stated "the engines ran like a clock the whole way."

Geared Jaguars are being used on the latest Imperial Airways Airliners. For greatest smoothness and best performance specify the

GEARED



JAGUAR

460-500 н.Р.

ARMSTRONG SIDDELEY MOTORS LIMITED

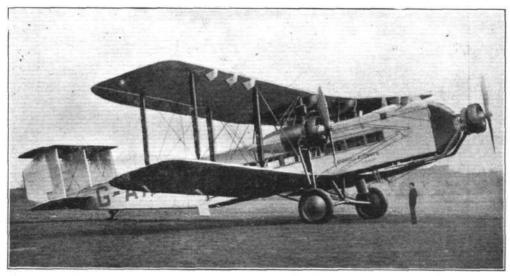
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ARMSTRONG WHITWORTH

AIRCRAFT



3 YEARS: 7,000 HOURS. 630,000 MILES

HESE are the figures for the Armstrong Whitworth Argosies on the London-Paris Airway.

During this period the Armstrong Whitworth Argosies

— fitted with three Jaguar engines — have surpassed all expectations for reliability, durability and low cost of upkeep AND ARE STILL IN PERFECT CONDITION. For safe and profitable flying specify the Argosy. Enquiries invited.

LEADING FEATURES

 Cruising Speed
 95 m.p.h.
 152 k.p.h.

 Top Speed
 120 m.p.h.
 192 k.p.h.

 Air Endurance
 3½ hours

 Useful Load
 5,000 lbs.
 2,273 kgs.

 Petrol
 250 gallons
 1136 litres

 Oil
 21 gallons
 95 litres

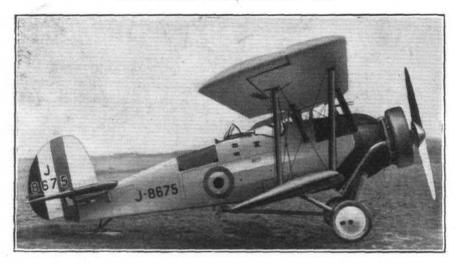
SIR W. G. ARMSTRONG WHITWORTH AIRCRAFT LIMITED

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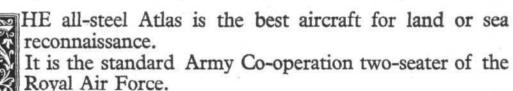


ARMSTRONG WHITWORTH AIRCRAFT



THE ALL STEEL ATLAS

(ON WHEELS, FLOATS OR SKIS)



Its steel construction accounts for its unrivalled durability and ease of maintenance. Fitted with the world-famous Armstrong Siddeley Jaguar engine (plain or geared type), its speed, climb and ceiling fulfil the severest Service requirements. It is produced on the grand scale by the best equipped aircraft works in Europe.

PERFORMANCE FIGURES

ATLAS WITH JAGUAR ENGINE AND TOWNEND RING

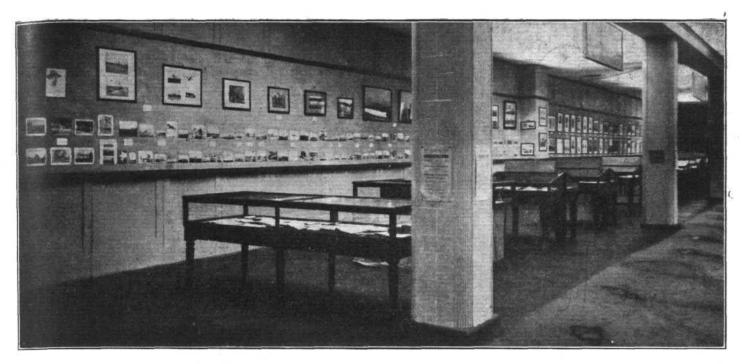
		16	Fuel, 75 gallo	ns (337 litres).	Oil, 7 gallons (3	32 litres). I	villitary Lo	ad, 880	10s. (400	kgs.)	
		Plain Engine. 4000 lbs.	Geared Engine. 4115 lbs.	Time to 5000 ft.			Plain Engine. 5.25 minutes		Geared Engine. 4.25 minutes			
				1820 kgs.	1870 kgs.	**	22	10000 ft.	12.5	*,	10.5	**
	Speed	ed at ground level		143.5 m.p.h.	149 m.p.h.	"	"	15000 ft.	26	"	21.75	**
	-1			231 km.p.h.	240 km.p.h.	**	22	1000 mtrs.	3.5	**	2.5	22
	**	99	5000 ft.	139.5 m.p.h.	145 m.p.h.	**	**	3000 "	12.5	11	10.25	"
	**	22	10000 ft.	134 m.p.h.	140 m.p.h.	**	99	5000 ,,	34	27	27.5	**
	**		15000 ft.	125 m.p.h.	131 m.p.h.	Absolute Ceiling		Ceiling	19000 ft. 5800 metres		19100 ft. 5830 metres	
	22		1000 metres	226 km.p.h.	236 km.p.h.							
	**	"	3000 metres	216 km.p.h.	225 km.p.h.	Service Ceiling			17300 ft.		17700 ft.	
	**	**	5000 metres	193 km.p.h.	204 km.p.h.					metres	5400	metres
				Maximum al	lowable R.P.M. 2	2200.	Nor	mal R.P.M	, 2000			

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THE ROYAL AERONAUTICAL SOCIETY AT OLYMPIA Another view of the exhibit of early aeronautical records, including photographs of the flight pioneers of 1908 onwards.

shows, and it is only comparatively recently that its uses as a life-saver has been recognised.

Finally, this interesting history was concluded with an extremely entertaining collection of caricatures and curiosities of flight—illustrating the common idea that flight was an

impossibility.

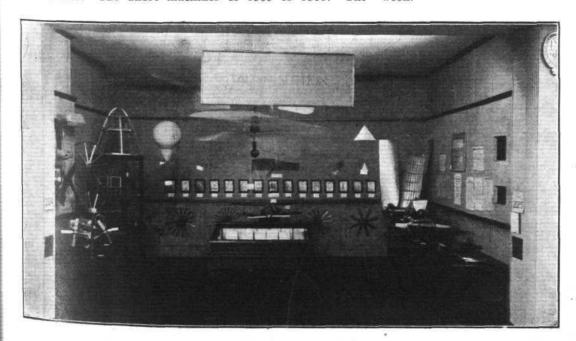
So much for the early history. Additional chapters in the story were to be found in an interesting group of prints and photographs illustrating the pioneers of gliding flight—Percy Pilcher and Lawrence Hargreve (following in the footsteps of the German pioneer, Otto Lilienthal)—and the

pioneers of the aeroplane, from 1908 to 1914.

These latter—illustrated by photographs—were vastly interesting, and it is to be hoped that some of the photographs will find a permanent place of safety, as they represent, perhaps, the only records left of some of these pioneer efforts with the practical aeroplane. They included the following pioneers:—The gliders of Pilcher and Maj. Baden Powell. R. M. Balston. John Stringfellow. Sir Hiram Maxim (whirling arm, steam-driven machine and track). S. F. Cody. A. V. Roe. The Short machines of 1909 to 1911. The

Valkyrie, Weiss and Gregoire Gyp of 1911. The Blackburn monoplane. The "Avis" monoplane. The Sopwith-Howard Wright. The Martinsyde monoplane. The Walton Edwards (Brooklands) and Collyer England (Shoreham) machines. Jezzi, Gnosspelius, and Molesworth ("Britannia") machines. Howard Flanders (Coventry Ordnance, etc.). Early Sopwith and Bristol efforts. Handley Page. Mann and Grimmer. Dyott. First Vickers (Flanders) twin-engine. Early seaplanes and flying-boats. The Brooklands and Hendon schools, etc.

The rest of the R.Ae.S. exhibit comprised an Italian section, arranged by Associazione Italiana di Aerotecnica and including models of the flying machines invented by Leonardo da Vinci; a French section arranged by Service Technique di l'Aeronautique containing a collection of rare engravings, books, MSS. and many other very interesting items (including the 50 h.p. Gnome and the Antoinette aero engines); and an Inventions Section. The latter, together with the Society of Model Aeronautical Engineers' exhibit, we must, unfortunately, leave until next

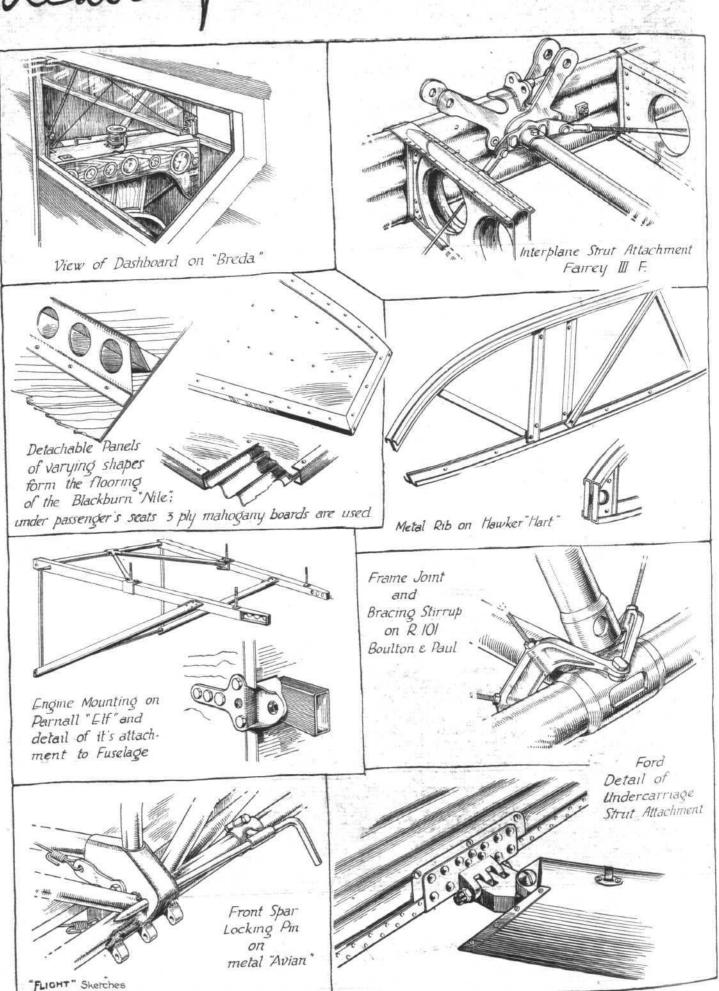


The Italian contribution to the Royal

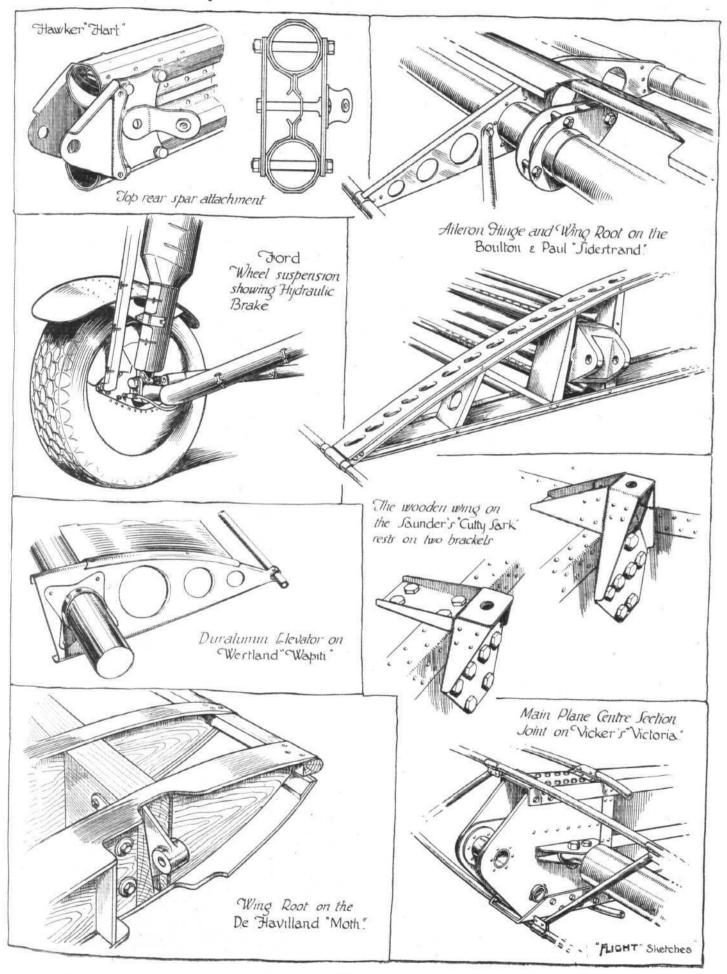
Aeronautical Society
exhibit.



Leaves from our Sketch Books



Leaves from our Sketch Books



CLOSING BANQUET TO THE SEVENTH INTERNATIONAL AERO EXHIBITION

M. Louis Bleriot a Distinguished Guest

HE Seventh International Aero Exhibition terminated with a happy banquet at the Savoy Hotel on Saturday, July 27, given by the chairman and members of the Exhibition Committee. As the banquet coincided with the celebrations of Monsieur Blériot's historic flight across the Channel in 1909, Madame Bleriot was presented with a diamond brooch by Lord Thomson on behalf of the Daily Mail before the banquet commenced.

The Rt. Hon. Lord Thomson, Secretary of State for Air, then presided over a large and representative assembly of British aviation and foreign delegates to the Exhibition. He proposed the toasts to the Royal Family, which was followed with a toast to the "Pioneers of Aviation," proposed by the Hon. W. P. MacCracken, Jnr., Assistant Secretary of

Commerce for Aeronautics, U.S.A.

In his remarks Mr. MacCracken observed that in proposing the toast the honour did not come to an individual, but to that country which had been honoured by the Wright Brothers. Every nation in both hemispheres had made a contribution to aviation. It was truly international, as the exhibition had demonstrated. While it was impossible to picture the conquest of the air, one could not help mentioning briefly what had happened in the years that had elapsed since M. Bleriot had flown the Channel. Every ocean had been flown, every Continent spanned. Even the Arctic and Antarctic had been invaded. We had been able to realise all that our forefathers had done, and could bear in mind our debt of gratitude to them.

The response to the toast was shared by M. Louis Bleriot, Sir A. Whitten Brown, K.B.E., and Mr. T. Sopwith, C.B.E. Speaking in his own language, M. Bleriot, who received a prolonged ovation, paid a tribute to the pioneer work of the Wright brothers, Sir Arthur Whitten Brown, and the

late Sir John Alcock.
Sir Arthur Whitten Brown then spoke briefly, to observe that we flew swiftly in aviation. Ten years ago they (Alcock and Brown) counted themselves the latest arrivals, treading as closely as they dared in the footsteps of M. Bleriot. It was M. Blériot who really showed that the aeroplane was not a toy, but a means of travelling from place to place, and later developments had proved that it was unequalled by any other manner of transportation. It was a sign of the times, concluded Sir Arthur, that in 10 years one was included in the honours as a pioneer.

Mr. T. Sopwith then joined in the response with an able

speech. It was difficult to say, he remarked, who came within the category of pioneers, for he could not help thinking that there were still pioneers in aviation to-day who were still young. No pioneer could go on without customers, and he felt that they owed a debt of gratitude to the Government which had enabled pioneers to carry on. To go back in history, the Wright Brothers had stood out by themselves. They were the first men to really fly. We could not sufficiently express our gratitude to them. Then in France they of aviation had seen Bleriot's wonderful flights, whilst they had with them that night M. Breguet, another pioneer.

And, continued Mr. Sopwith, they could not let the occasion pass without mentioning the British pioneers: Sir Alliott Verdon Roe, Mr. Handley Page, Mr. Howard Wright, Mr. Manning, Mr. Short, Capt. de Havilland, Col. Cody, the Hon. C. Rolls, and Mr. Grace. He hoped he would be in order in calling for a silent toast to those early pioneers who had

The large assembly rose immediately and paid a solemn tribute.

Air Vice-Marshal Sir Sefton Brancker, Director of Civil Aviation, followed Mr. Sopwith with a characteristic breezy speech in proposing the toast to the "Sport of Flying." First, he went into an amusing analysis of the word "sport," with the assistance of Mr. Webster. But in his more serious vein he said that it was through sport that aviation had advanced so quickly. Two successful light 'plane meetings were held a few years ago, and then the Government gave were held a few years ago, and then the Government gave mediocre assistance to a light 'plane movement, which was a purely sporting movement. Sir Sefton next advanced certain claims for Great Britain in the matter of private flying, with appropriate apologies to the foreign guests beside him. He claimed that we had more purely amateur flying in this country than the whole world put together, more private flying, and the best light 'planes. But he conciliated the foreign guests by assuring them that they would catch up. Sir Sefton next made an attack on air regulations. The great thing, he declared, was to get away from regula-tions. He had tried, and one result was that three weeks ago, a gentleman of 65 years had flown in a singleengine machine, direct across the North Sea, from Norfolk. Another truism he observed was that the ladies had been given a chance by the introduction of the light 'plane, whilst he also expressed our debt of gratitude to many great sportsmen, and named Jacques Schneider, Lord Northcliffe, Mr.

A. GROUND TEST FOR THE AIR: This Reid Pilot Indicator attracted considerable interest at the International Aero Exhibition. A public com-petition was held by National Flying Ser-vices to discover the suitability of competitors of both sexes for flying. The winners were Miss Sale Barker (in the cockpit) and Mr. Henry - immediately behind her. Lady Bailey and Sir Sefton Brancker are on the right and Sqdn.-Ldr. Reid, the inventor of the dicator, on the left.





Blackburn

200 H.P. LINCOCK SINGLE-SEATER FIGHTER

"One is glad to have another opportunity of emphasising the Lincock's performance, for it is miles an hour faster than any single-seater which is at present issued to squadrons of the R.A.F. ... It did everything that has ever been done at an R.A.F. Pageant by a single-seater. Its vertical upward rolls were quite remarkable and its slow horizontal rolls showed that it is good to handle." The Aeroplane April 3 1929.



THE BLACKBURN AEROPLANE AND MOTOR COMPANY LID Head Offices and Works: BROUGH, EAST YORKSHIRE.

London Office: AMBERLEY HOUSE, NORFOLK STREET, STRAND, W.C.

Gordon Bennett, Mr. Pulitzer, and Sir Charles Wakefield. Also M. Bleriot, he said, stood out as one of the biggest of sportsmen. When he crossed the Channel in 33 mins., his sportsmen. engine had never run 33 mins. before in its life, and never did another 33 mins. afterwards. When he started that

fight, M. Bleriot had spent his last penny.

In his concluding remarks, Sir Sefton declared that the real value of aviation was its contribution to international understanding and friendship, and he paid tribute to the careers of the three names associated with his in the toast to the Sport of Flying, namely, Monsieur Flandin, Signor Caproni, and Lt.-Col. Mervyn O'Gorman, of whom the last two were present. Signor Caproni next replied briefly in English. Sporting aviation, he remarked, was an easy means of going from one nation to another.

Lt-Col. O'Gorman first expressed his delight in being associated with the movement which made for international friendship, and then defended the air regulations which Sir Sefton had attacked. The sport of flying, he said, had been left completely honest by the Royal Aero Club and the Federation Aeronautique Internationale. Touring facilities had been achieved which were of great importance. In concluding, Lt.-Col. O'Gorman appealed to air tourists to join the Royal Aero Club to bring in the valuable information gleaned from their European tours for the benefit of air

touring in general.

Capt. P. D. Acland then rose, and stated that he was permitted by the Secretary of State for Air to say a few words about those who had worked behind the scenes of the Exhibition. First, a tribute was due to Mr. C. Allen, Secretary of the S.B.A.C., for the work he had done was an absolute Secondly, he referred to the Manager of the Exhibition. Mr. Phillip, who had a task of very great difficulty. always up against them, yet he remained one of them. Thirdly, he would mention a name known throughout the aeronautical world, Major Archie Boyle, of the Air Ministry. Lastly, Capt. Acland referred to the Secretary of State for Air, who had presided that evening. During the few years since he last held office, he had continued his studies and had come back to them refreshed.

Lord Thomson briefly replied, and the banquet came to

a happy close.

Amongst the guests invited were :-

Mr. C. R. Fairey, Mons. and Madame Bleriot, Mr. Handley Page, Mr. H. G. ffiske, Mons. P. E. Flandin, Capt. and Mrs. Acland, Mr. and Mrs. R. Blackburn, Sqdn.-Ldr. L. Slatter, Mr. G. Parnall, Rt. Hon, T. P. O'Connor, Mr. and Mrs. R. K. Pierson, Sir Alliott and Lady Roe, Col. The Master of Sempill and the Hon. Mrs. Forbes Sempill, Mr. H. O. Short, Mr. F. Sigrist, Sir Arthur and Lady Whitten Brown, Mr. and Mrs. T. Sopwith, Lt.-Col. Mervyn O'Gorman, Mr. and Mrs. W. S. Stephenson, Major and Mrs. J. Stewart, Sir George Sutton, Mr. A. F. Sidgreaves, Lt.-Col. and Mrs. N. G. Thwaites, General P. R. C. Groves, Mr. and Mrs. H. T. Vane, Major O. G. G. Villiers, the Hon. W. MacCracken, M. Louis Vinay, Mr. C. C. Walker, Capt. Williams, Signor Caproni, Mr. and Mrs. H. E. Wimperis, Capt. L. W. Charley, Sqdn.-Ldr. and Mrs. H. N. Wrigley, Brig.-Gen. F. H. Williamson, Mr. and Mrs. Wallace Barr, Capt. Sinclair, Capt. N. Stack, Lt.-Comdr. Don Nuuez, Col. J. S. Matthew, Mr. and Mrs. P. Maxwell Muller, Com. and Mrs. H. Perrin, Mr. J. L. Pritchard, Sqdn.-Ldr. G. H. Reid, Group-Capt. M. G. Christie, Sqdn.-Ldr. R. de Haga Haig, Major and Mrs. H. Hemming, Mr. J. J. Ide, Major Jullerot, Mr. O. G. Karlowa, Mons. F. Liore, Mr. D. Longden, Commandant J. Le Comte, Brig.-Gen. Sir C. Delme-Radcliffe, Mr. and Mrs. Desoutter, Mr. A. Duckham, Mr. H. B. Ellerton, Major Lester D. Gardner, Capt. Feruh Bey, Mr. A. J. Bonnella, Mr. Bramson, Mons. L. Breguet, Sqdn.-Ldr. A. R. Boyle, Sir E. T. F. and Lady Crowe, Lt.-Col. H. W. G. Cole and Air Commodore J. A. Chamier.



THE R.Ae.S. CONVERSAZIONE AND WILBUR WRIGHT LECTURE

THE international character of aviation was expressed in the large assembly which gathered at the Conver-sazione arranged by the Royal Aeronautical Society on July 25 at the Science Museum, South Kensington. The machine in which Monsieur Bleriot accomplished his historic flight across the Channel in 1909 was exhibited for the occasion and attracted great attention. During the evening the Wilbur Wright Memorial Lecture was delivered by Mr. W. P. MacCracken, junr., Assistant Secretary of Com-Before the reception the Council merce for Aeronautics. of the Society entertained to dinner about 20 guests, who included the French Ambassador and representatives of foreign aeronautical societies. Col. the Master of Sempill presided.

At the Conversazione there were nearly 600 guests, who were received by Col. the Master of Sempill and the Hon. Mrs. Forbes Sempill. The President first presented the medals awarded by the Society for the year, as follows:—
The Wakefield Gold Medal: Mr. H. B. Irving, F.R.Ae.S., for his work on Slot and Control. The Taylor Gold Medal: Prof. B. Melvill Jones, F.R.Ae.S., for his paper on the Streamline Aeroplane. The Simms Gold Medal: Mr. H. Streamline Aeroplane. The Simms Gold Medal: Mr. H. Sutton, A.F.R.Ae.S., for his paper on Light Alloys from

the point of view of Corrosion. The Busk Memorial Prize: Mr. W. S. Farren, F.R.Ae.S., M.I.Ae.E., for his paper on Monoplane or Biplane?

Mr. MacCracken then read the Wilbur Wright lecture on the subject of science in relation to regulating and promoting civil aviation, in which he described the present position of civil aviation in America and its enormous expansion.

Amongst the large number of guests, who included many ladies, the following accepted invitations to be present:—

ladies, the following accepted invitations to be present:—

Capt. P. D. Acland, Mr. P. Alexander, Sir Herbert Austin, Lady Bailey, Prof. L. Bairstow, Wing-Com. H. Blackburn, Mr. R. Blackburn, Air Vice-Marshal Sir Sefton Brancker, Maj. G. P. Bulman, Sqdr.-Ldr. Burge, Sir Alan Cobham, Wing-Com. T. Cave-Browne-Cave, Air Com. J. F. Chamier, Sir R. Whaley Cohen, Mr. Handley Page, Mr. A. Duckham, Baron Beck Fries, Commandant Gailliard, Maj. Lester Gardner, Sir Richard Glazebrook, Sqd.-Ldr. Haig, Maj. H. Hemming, Sir Charles Wakefield, Capt. G. R. T. Hill, Air Commodore F. V. Holt, Mynheer J. B. Hubrecht, Wing-Com. G. B. Hynes, Lieut-Comdr. Kingman, Sqd.-Ldr. A. Kubita, Dr. W. W. Lanchester, Mon. C. M. Lapten, Maj. Sir Humphrey Leggett, Maj. A. R. Low, Sir Francis K. McClean, Col. J. S. Matthew, Sir Alliott V. Roe, M. Matsudaira, Maj. R. H. Mayo, Lieut-Col. Moore-Brabazon, Col. Mossberg, Maj. T. Nakachima, Sr. Dr. Regis de Oliveira, Mr. H. T. Vane, Sir Joseph Petavel, Sir Ernest Petter, Capt. J. Laugence Pritchard, Air Com modore Weir, H. H. Prince Purachatra, Maj. F. A. de V. Robertson, Wing-Com. J. Sowrey, Air Vice-Marshal Sir Oliver Swann, The Dowager Lady Swaythling, Lieut. Comdr. W. D. Thomas, Maj. O. G. G. Villiers, Air Vice-Marshal Sir Vyell Vyvyan, Mr. H. E. Wimperis, and Mr. R. McKinnon Wood.



To Meet the Australian Airmen

 $_{\rm C.\ U_{LM}}^{\rm SQDN.-LDR.\ C.\ E.\ Kingsford}$ Smith and Flight-Lieut. Australia in the Southern Cross, will be received by the President and Council of the British Empire League on August 7 at the British Empire Club, 12, St. James's Square, S.W. S.W. Sir Sefton Brancker will receive the guests.

Claims for U.S. Navy's Air Supremacy

That aircraft have become an integral and vital component of naval power is admitted, states the *Daily Telegraph* naval correspondent, by all competent authorities. The fighting efficiency of a modern fleet depends, in large measure, on its aerial auxiliaries, which perform such important duties as reconnaissance, "spotting" or marking for the big guns when these are firing at extreme range or for the big guns when these are firing at extreme range or under conditions when direct aiming is impossible, carrying out torpedo and bombing attacks on enemy vessels, laying smoke-screens, and locating hostile submarines. From now on, therefore, the factor of air strength must be included when activation in the strength must be included. when estimating the power of navies.

At the present time the United States Navy is enormously superior to all others in air strength, and its lead is being

rapidly increased. On March I this year it posessesd 867 effective aeroplanes, while on the same date the British Navy had but 135. Since then the purchase of 273 more aeroplanes has been authorised for the American Navy, and 18 for the British Navy. Hence the aircraft establishments of the two fleets now stand as follows

Effective machines ready and on order: American Navy,

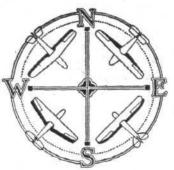
1,140; British Navy, 153.

As these figures show, in air power the American Navy has a superiority of more than seven to one, and at the current rate of progress on either side, the ratio will soon be ten to one. During the week ended July 6 the American Navy Department placed orders for 152 new aeroplanes for the fleet. In a single week, therefore, practically as many new machines were ordered for the American Navy as the total number possessed by the British Navy.

Greek Ministry of Defence

A MINISTRY of National Defence in Greece, which will absorb the existing Ministries of War and Marine, may be constituted when Parliament meets again. In the new Department there may be Under Secretaries of State for Naval and Military Aviation, War, and Marine.





FOUR WINDS

American Endurance Flight

A short time ago American airwomen competed in rapid succession for the duration record on light 'planes. Now, American airmen have taken a cue from them, and are constantly beating duration records under refuelling conditions. The latest record, as we go to press, is that which has just concluded over St. Louis. Mr. D. Jackson and Mr. Forest O'Brien were in the air over 420 hrs., or 17½ days, on board the St. Louis Robin, a Curtiss-Robertson monoplane. The previous record in this monoplane. The previous record in this class was one of 10 days 6 hrs. Both airmen were reputed to be earning so many pounds per hour for each hour above the old record, so

they had a great incentive to keep going.

The Duchess of Bedford's New Flight

The Duchess of Bedford is waiting for favourable weather to leave Lympne Aerodrome in a monoplane in an attempt to fly to India and back in a week, a distance of 10,000 miles. The machine will be piloted by Capt. C. D. Barnard. On a previous attempt to make a fast return flight to India the Duchess was forced to alight on the shores of the Persian Gulf. Special petrol tanks have been fitted in her machine, and she and Capt. Barnard hope to make the flight to India with only one stop. Immediately on Karachi they propose to start their return flight. Immediately on arrival at

Frenchwoman's Record

MLLE. MARYSE BASTIE, reputed to be the only woman pilot in France who has obtained a passenger-flying licence, has just broken the feminine world's record for endurance in Leaving Le Bourget aerodrome at 5.17 a.m., on July 28, she landed again at 8.3 a.m. the next day, after flying for nearly 27 hrs. She thus broke the world's record previously held by Miss Smith, of America, by 22 mins. Her machine is a Caudron monoplane of 40 h.p., which had been fitted with auxiliary petrol tanks. Mlle. Bastie is not quite satisfied with her performance, for she had hoped to stay in the air for 30 hrs. The atmospheric conditions were unfavourable, however, and during many hours of her flight she had to contend with violent storms.

First Norway Flight

The 20th anniversary of M. Blériot's Channel flight is closely followed by the 15th anniversary of the first aircraft flight across the North Sea from Scotland to Norway. flight was made on July 30, 1914, by Maj. (then Lieut.) Tryggve Gran, the Norwegian airman and explorer, in a Blériot monoplane fitted with an 80-h.p. Gnome engine. He took off from Cruden Bay, Aberdeenshire, at 1.8 p.m., and arrived at Klep, near Stavanger, Norway, 4 hrs. 10 mins. later, after an oversea journey of 320 miles. That was then the That was then the longest flight out of sight of land.

Moral-Silence is Golden!

COMMANDER FRANCO, the Spanish airman, who was recently rescued by H.M.S. "Eagle" in the Atlantic, has been deprived of his air command for, it is understood, criticising the way in which the search for his seaplane was carried out by the Spanish air authorities. Soviet Visit to Croydon

THE Soviet aeroplane, Wings of the Soviet, which is making a tour of Europe, arrived at Croydon Aerodrome on July 30. It is said to be the first Russian aeroplane to arrive in this country since the war. The machine, which is a three-engined country since the war. monoplane, with accommodation for ten passengers, had flown from France, where it had been forced to alight owing to engine trouble in attempting a non-stop flight from Rome



The Lord Mayor of Nottingham (Alderman A. R. Atkey) receiving the licence for the new Nottingham Corporation Aerodrome (Tollerton) from Mr. F. Montague, Under Secretary of State for Air, at Stag Lane Aerodrome on July 27, after flying down from Nottingham. He immediately flew back to perform the opening ceremony at which Sir Alan Cobham was present. Our illustrations show the Under Secretary for Air presenting the Mayor with the licence, with Air Vice-Marshal Sir Sefton Brancker an interested witness, and the arrival in the Nottingham Club's D.H. "Moth," piloted by Flight-Lieut. F. L. Bateman. ("Flight" Photos.)

Efficiency









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consequent immensely important increase in "pay load."

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The structure weight of aircraft in relation to the "all up" weight has, in recent years, become a figure varying from 30 per cent. to 35 per cent. for normal commercial machines with normal factors of safety.

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PRIVATE



FLYING

A Section of FLIGHT in the Interests of the Private Owner, Owner-Pilot, and Club Member

BOMBAY FLYING CLUB

First Annual Report

THE first annual general meeting of the members of the Bombay Flying Club, Ltd., was held in the Moorish Room of the Taj Mahal Hotel, Bombay, on May 30, when the committee's report and the balance sheet and income and expenditure account for the period ending March 31, 1929, were passed. The balance sheet showed that the financial position was very satisfactory. The club possesses three aeroplanes which, with other assets, bring the total to £5,246, against which liabilities, including a sum set aside for an insurance fund, amount to £5,067. Excess of income over expenditure was therefore £179.

This club was incorporated on May 9, 1928, but it was

not until January 13, 1929, that instruction could be commenced, as the two de Havilland "Moths" presented by the Government of India under the subsidy scheme, were not delivered in Bombay until the early days of that month. Therefore the club had only an actual flying existence of two and a half months at the end of its first financial year, but in that short period the pilot instructor had under instruction no less than 24 pupils, of whom 18 were Indian members. It is interesting to note that the first eight members to receive instruction were

It should be realised that in Bombay it is only possible to give flying instruction in the early morning and the late afternoon so that the number of flying hours available for training pupils is very limited; in spite of that the number of hours flown reached the remarkably good total of 323.

Achievements

To the Bombay Flying Club, Ltd., belongs the honour of having taught the pupil who obtained the first "A" licence issued in India, namely Mr. Jehangir Tata, who passed the necessary tests on February 10, 1929. A few days later, Mr. Gormley, one of the ex-Air Force members of the club, was successful in passing the night flying tests which are required by the regulations for obtaining a "B" licence. The achievement of which the club is most proud, however, is that of one of its lady members, Mrs. Petit, who is the first lady to obtain an "A" licence in India.

The Bombay Flying Club, Ltd., was established to teach the art and science of aeronautics and to encourage flying in all its various aspects. At present only a few Indians are airminded. The aeroplane is looked upon by the vast majority in much the same way as was the motor-car 25 years ago, and it is the endeavour of the club to remove that distrust by demonstrating that the aeroplane is as safe and reliable as any other form of transport. That the modern light aeroplane is safe is proved by the records of the club. At the date of the general meeting the club aeroplanes had been flown a total of 492 hours, practically all of which was accom-

plished either in the training of the pupils or by pupils themselves flying solo. That is equivalent to a distance of approximately 35,000 miles—which was covered without accident or injury to any person. Eleven pupils—of whom seven are Indians—have already passed their tests for "A" licences. If it had not been for the exceptionally early break of the monsoon the number would have been even higher.

The calls upon the club are many; there is an increasing demand for tuition, joy-rides, and air travel. During the past season applications were received to convey passengers to Poona, Nasik, Matheran, Kathiawar, and even as far as Rawalpindi, but it was not possible to meet these requirements as the club's pilot-instructor was fully occupied in teaching pupils. It is hoped, however, that in the near future a number of passenger-carrying flights of an experimental nature will be made, so that when civil aviation companies are formed to operate internal air lines in India the club's experience will be of assistance to them.

The activities of the club in Bombay at this time of the

year are, unfortunately, limited by the fact that the aero-drome at Juhu is not suitable during the monsoon, and it was proposed to send the pilot-instructor on an air tour of the Presidency to give joy-rides at principal towns. At the same time, sites for prospective landing grounds will be examined, so that the members of the club who purchase their own aeroplanes (already a number have been ordered) will be able to fly practically anywhere. In this connection it is interesting to note that Poona is only about an hour's flight from Juhu and Matheran scarcely 15 minutes.

The social side of the club is not being overlooked. It is proposed to erect a club-house on the aerodrome where members can entertain their friends and watch the flying in ease and comfort. To enable this to be done, more members are required. Membership, however, is not limited to those who wish to learn to fly. Pupils are particularly welcomed, but the club also welcomes those who, while not desirous of learning to fly, realise the tremendous future of aviation in India. The club is fortunate in having as its chairman Sir Victor Sassoon, whose connection with flying dates back to the very earliest days—his English pilot's licence, No. 52, having been obtained before the War. Many of Bombay's most prominent business men have shown their appreciation of the importance of flying to India by joining the club, and are assisting it by serving on the committee or making donations. A number of ex-Air Force officers—whose practical experience is invaluable—have become members.

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The club has had a successful inauguration. It has taught the first Indian and the first Indian lady to fly in India. Other clubs are hard on its heels (perhaps one should say

its tail-plane).

Marconi Equipment on the "Discovery"

The barque "Discovery," which is due to leave the Thames today (August 1) for a new voyage of Antarctic exploration. ation, is equipped with Marconi wireless apparatus that will enable it to maintain constant communication with the outside world. The expedition, which is under the leadership of Six World. of Sir Douglas Mawson, the Australian explorer, has been specially equipped for scientific and survey work in the Antarctic to the south of Australia, and the comprehensive wireless equipment will play an important part in keeping the party closely in touch with the scientific world. The De Havilland "Moth" is to be used for scouting purposes

within a range of 100 miles of the "Discovery." It is being fitted with the new Marconi transmitting and receiving set for light aeroplanes, specially adapted for Morse working. During scouting expeditions, the pilot will keep in touch with the base ship, which, by means of its Marconi direction finder, will, at the same time be able to locate the direction of the "Moth." In case of a forced landing, an emergency aerial can be rigged on the machine, and the generator promally driven by airscrew can be operated by hand. With normally driven by airscrew can be operated by hand. the power thus supplied, a special automatic code sender enable messages to be sent from the aeroplane to the "Discovery."

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London Aeroplane Club, Stag Lane, Edgware, Sec., H. E. Perrin, 3, Clifford Street, London, W.1.

Bristol and Wessex Aeroplane Club, Filton, Gloucester. Secretary, Major G. S. Cooper, The Aerodrome, Patchway, Glos.

Cinque Ports Flying Club, Lympne, Hythe. Hon. Secretary, R. Dallas Brett, 114, High Street, Hythe, Kent.

Hampshire Aero Club, Hamble, Southampton. Secretary, H. J. Harrington, Hamble, Southampton.

Lancashire Aero Club, Woodford, Lancs. Secretary, Mr. Atherton, Avro Aerodrome, Woodford.

Liverpool and District Aero Club, Hooton, Cheshire. Hon. Secretary, Capt. Ellis, Hooton Aerodrome.

Midland Aero Club, Castle Bromwich, Birmingham. Secretary, Maj. Gilbert Dennison, 22, Villa Road, Handsworth, Birmingham.

Newcastle-on-Tyne Aero Club, Cramlington, Northumberland. Secretary, John Bell, Cramlington Aerodrome, Northumberland. Norfolk and Norwich Aero Club, Mousehold, Norwich. Secretary, G. McEwen, The Aerodrome, Mousehold, Norwich. Nottingham Aero Club, Hucknall, Nottingham. Hon. Secretary, Cecil R. Sands, A.C.A., 30, Park Row, Nottingham. The Scottish Flying Club, 101, St. Vincent Street, Glasgow. Secretary, George Baldwin, Moorpark Aerodrome, Renfrew. Southern Aero Club, Shoreham, Sussex. Secretary, Miss N. B. Birkett, Shoreham Aerodrome, Sussex.

Suffolk Aeroplane Club, Ipswich. Secretary, Maj. P. L. Holmes, The Aerodrome, Hadleigh, Suffolk.

Yorkshire Aeroplane Club, Sherburn-in-Elmet, Yorks. Secretary, Lieut.-Col. Walker, The Aerodrome, Sherburn-in-Elmet.

CINQUE PORTS FLYING CLUB, LTD.

CINQUE PORTS FLYING CLUB, LTD.

(JULY 21-27).—Pilot Instructor: K. K. Brown. Ground Engineer: R. H. Wynne. Machines in commission: RI and PM. Total for week: 36 hrs. 5 mins. Dual: Mr. Hume, 1 hr.; Mr. Cargill, 7 hrs.; Mr. Coates, 30 mins.; Mr. Whittingham, 30 mins.; Mr. Cox, 15 mins.; Mr. Cooke, 2 hrs. 30 mins.; Lieut.-Cmdr. Gubbins, R.N., 30 mins.; Mr. Wynne, 30 mins.; Mr. Lambert, 2 hrs. 30 mins.; Mr. Llewellyn, 2 hrs.; Mr. Hyde, 30 mins. Total: 11 members, 17 hrs. 45 mins. Advanced dual: Mr. Bailey, 45 mins. "A "Pilots: Mr. West, 2 hrs. 30 mins.; Mr. R. Dallas Brett, 1 hr. 15 mins.; Mr. K. Edgson Wright, 15 mins.; Mr. Ellis, 3 hrs. 15 mins.; Mr. Richardson, 4 hrs. 15 mins.; Mr. Somerset, 3 hrs. Total: 6 members, 10 hrs. 30 mins. Jovrides: 5—55 mins. Tests: 11—1 hr. 35 mins.

On Thursday, 25th, Mr. G. F. Storey of Hythe, who was the first ab initio pupil trained by the club, left Lympne for Ballimrobe, County Galway, Ireland, in his Moth, G-EBTZ. He went straight through in the day via Hooton and Baldonnell in weather which was sufficiently bad to stop flying on club aircraft at Lympne during the afternoon. This is probably the best performance yet put up by one of our members, and the club would like to congratulate Mr. Storey on an excellent show.

On Friday, Mr. Somerset flew PM with Mr. West as passenger, to Shoreham and back, under the new Cross Country Scheme for "A" pilots.

Mr. Bailey, a "B" licence pilot, joined the club during the week and began flying with the object of getting Moth on to his licence.

Weather stopped flying altogether on Monday and restricted it considerably on Thursday, otherwise we should have beaten last week's record of 36 hrs. 50 mins. Friday of this week was a record day with 10 hrs. 20 mins. for the two machines. The 36 hrs. recorded means that the two club aircraft flew about 2,500 miles between them during the week or over 5,000 miles in the last fortnight.

HAMPSHIRE AEROPLANE CLUB

HAMPSHIRE AEROPLANE CLUB

(July 20-26).—Pilot Instructors: Flight-Lieut. F. A. Swoffer, M.B.E., and Mr. W. H. Dudley. Ground Engineers: Messrs. E. Lenny and S. W. Riches. Aircraft: Avian G-EBVI and Spartan G-AAFR. Flying time for the week: 50 hrs. 40 mins. Pupils under instruction (28), 29 hrs. 50 mins. Soloists: (8), 6 hrs. 30 mins. "A" Pilots; (12), 13 hrs. 30 mins. Instructors solo and tests: (9), 50 mins.

Messrs. Stisted, Holmes and Barlow joined the club this week. Messrs. Mariner and Chalmers completed the tests for their "A" licence.

Members are reminded that the club has chartered the Isle of Wight steamer "Prince of Wales" for the use of members and their friends on September 7, the date of the Schneider Trophy Contest. Tickets are now available and those who desire them should get in touch with the Secretary as soon as possible. Tickets, exclusive of refreshments are £1 ls. each, and all applications must be accompanied by a remittance.

N.B.—The club will be closed from August 4 to 12 for the summer holidays. We have to express our appreciation of the gift of a very handsome cigarette lighter from Mr. Keith Jopp, who has just completed 1,000 hrs. flying, and has very kindly made this gift as a memento.

LANCASHIRE AERO CLUB

LANCASHIRE AERO CLUB

(JULY 21-27).—Flying time: 33 hrs. 20 mins. Instruction (15): 12 hrs. Solo flights (22): 14 hrs. Passenger flights (8): 5 hrs. 35 mins. Tests (11): 1 hr. 45 mins.

Instruction (with Mr. Hall): Braid, Stross, Weale, Greg, B. Taylor, J. H. Ashworth, Riley, Corrigan, Gerrard, Kay, Wilkinson, F. S. Ashworth, Dane, Powell, Moore.

Machines in commission: MQ, XD, EC.
Soloists (under instruction): Stross, S. Taylor.

Pilots: Garner, R. F. Hall, Weale, Gattrill, Ruddy, Goss, Lacayo, Riley, Twemlow, R. G. Davies, Gerrard, Kay, Maxwell, W. Ashworth, Mills, Meads, Michelson, Powell, D. Nelson.

Passengers (with Mr. Lacayo): Goss, Whitehouse. (With Mr. Hall, R. F.): Miss Sutcliffe. (With Mr. Garner): Long. (With Mr. Twemlow): Foden (With Mr. Elwell): Stuart. (With Mr. Powell): Miss King, Miss Powell.

During the week Mr. Stross completed an excellent first solo and Mr. S. Taylor completed all tests for his "A" licence.

Mr. W. Ashworth had an exciting experience on Friday evening when a connecting rod broke shortly after he had taken off. With a skill which did credit both to himself and to his instructor, he landed safely on the aerodrome without damage to the machine, but the engine was unfortunately damaged beyond repair.

Civil Aviation Committee

As we predicted in a recent issue of FLIGHT, the Air Ministry announces that Lord Thomson, Secretary of State for Air, has formed a "Civil Aviation Consultative Committee," to assist him in the examination of questions relating to Civil Aviation. Mr. F. Montague, M.P., Under-Secretary for Air, will be the chairman. The terms of reference are :-To examine and report to the Secretary of State for Air on questions relating to the development of Civil Aviation in the British Empire. In addition to the chairman, the

NEWCASTLE-UPON-TYNE AERO CLUB

NBWCASTLB-UPON-TYNB ABRO CLUB

(JULY 22-28).—Instructor: G. M. S. Kemp. Engineer: W. Dunning.
Aircraft: 3, PT, LX, QV. Flying time: 42 hrs. 30 mins. Instruction:
20 hrs. 35 mins. "A" Pilots: 8 hrs. 45 mins. Solo training: 10 hrs.
45 mins. Passengers: 1 hr. 35 mins. Tests: 50 mins.
Two of our new pilot members completed very creditable first solo flights
last week. They were Mr. Hutchinson and Mr. McIntyre. They went off
solo in the short space of time of 5 hrs. Mr. Wills of London landed his
machine at the aerodrome last week and stayed overnight at Newcastle,
and the same day we had a visitor from the Brooklands Flying School, who
rested a while on his way to Edinburgh. Sunday, our busiest day, proved
to be a failure this week. It started in the morning with poor visibility,
and towards the afternoon rain began to fall and consequently the flying time
suffered greatly.

SUFFOLK @ EASTERN COUNTIES AEROPLANE CLUB

SUFFOLK & BASTBRN COUNTIBS ABROPLANB CLUB

(JULY 14-20.)—Instructors: G. E. Lowdell, A.F.M., H. M. T. Clayton.

Ground engineers: E. Mayhew, H. Brown. Aircraft: "Bluebirds" RE,

SZ, UH and BF. Flying time by Suffolk and Cambridge Clubs, as follows:—

Suffolk Aero Club: Total flying time: 15 hrs. 15 mins. Eleven members

were given dual instruction: 10 hrs. 5 mins. Seven members flew solo,
under instruction: 2 hrs. 50 mins. Flights were made by three "A" and

"B" pilots: 45 mins. Twelve tests were made: 1 hr. 5 mins. Four

passengers were carried: 30 mins.

Mr. Lowdell, our chief instructor, is in great demand at local fetes, etc., to
give exhibitions of aerobatics on the Bluebird, during the past week he gave

demonstrations at Framlingham and Hintlesham.

Mr. Murray (a private owner member) flying a Moth obtained second prize
in the International Aerobatic Competition held at Heston Aerodrome.

Cambridge Aero Club.—Total flying time: 10 hrs. 30 mins. Seven members

were given dual instruction: 6 hrs. 50 mins. One "A" pilot flew: 50 mins.

Eight tests were made: 1 hr. 30 mins. Three passengers were carried:

1 hr. 20 mins.

(JULY 21-27). Flying time by Suffolk and Cambridge Clubs as follows:

(July 21-27). Flying time by Suffolk and Cambridge Clubs as follows: Suffolk Aero Club.—Total flying time, 23 hrs. 30 mins. 13 members were given dual, 9 hrs. 6 members flew solo under instruction, 9 hrs. 40 mins. Flights were made by "A" and "B" pilots, 2 hrs. 55 mins. 10 passengers were carried, 1 hr. 11 tests were made, 1 hr. Mr. Starkey and Mr. King-Salter were successful in passing their tests for "A" licences. Mr. May has performed his "figure of eight" test. An International Air Rally is to be held at Hadleigh on August 31 and September 1. Prizes: £25, £10, £5. Further details will be published later.

FROM THE FLYING SCHOOLS Brooklands School of Flying, Brooklands Aerodrome

Grooklands School of Flying, Brooklands Aerodrome

(JULY 21-27).—Flying time: 47 hrs.'

This has been one of the busiest weeks we have had since the school started. Half our staff have been fully occupied at the Aero Show, while those remaining here have been hard put to it to keep up with the stream of pupils that have come of late. In spite of this we do not think any pupil has had to go away without his lesson.

The school wish to congratulate Mr. K. G. Murray, an old pupil of Capt. E. A. Jones, one of the school instructors, on winning second prize in the International Aerobatic Competition at Heston on July 13. We consider this a very creditable performance, considering Murray only got his licence a year ago and is only 20 years of age.

On Saturday last Mr. S. Dawson successfully carried out his first solo. The following new pupils have joined the school: "Messrs. Nelson, Lyle, Dr. and Mrs. Walpole, and Miss Ling.

Phillips and Powis School of Flying, Reading Aerodrome

(July 19-25).—Flying time: 15 hrs. 5 mins. Instructors: Flying-Officer R. T. Shepherd and Mr. H. B. G. Michelmore. We are taking delivery this week of our new demonstration Gipsy Moth. We are installing a Moth showroom on the aerodrome, and will keep a new Gipsy Moth in stock for immediate delivery. Mr. A. L. Hill is taking delivery of a second-hand machine from us this week.

100

Committee will consist of seven members, three being Members of Parliament (one from each party), one having expert knowledge of aviation, and the remaining three having special experience of industrial experience. special experience of industrial and transport problems. The names of the Committee are :-

Sir William Brass, M.P., Sir Archibald Sinclair, M.P., Mr. H. Snell, M.P. (Parliamentary Representatives), Sir Allan Anderson (Shipping), Mr. F. G. Evans (Railways), Sir Roland Nugent (Federation of British Industries), and Lieut.-Col. Mervyn O'Gorman (Aviation).



The Hawker Hornet with Rolls Royce F. engine. The fastest single seater fighter in the world.

("FLIGHT" Photo.)

HANDLEY PAGE AUTOMATIC SLOT CONTROL

"I think I might say the Automatic Slot saved our lives, when we were crossing the Atlas Mountains in Morocco. We were in a narrow gorge when our petrol line failure forced us to land; The wing slots brought us down safely."

VICOMTESSE DE SIBOUR, during her world tour in a slotted "Moth."

" Daily News."
27th June, 1929.

HANDLEY PAGE, LTD. CRICKLEWOOD, LONDON, N.W.2.



THE CHANNEL DISASTER

Air Ministry Report

IN our issue for July 18, we published a brief summary of the Air Ministry report on the formal investigation into the accident on June 17 to the cross-Channel aircraft, G-EBMT. Owing to the importance of the recommendations, etc., contained in the report regarding this regrettable accidentwhich resulted in the loss of seven passengers—we publish below the report in full. It is dated July 12, 1929, addressed to the Secretary of State for Air, and signed by Sir Arthur Colefax, who held the inquiry, and by Air Commodore J. G. Weir and Mr. James Swinburne, appointed by the Air Ministry The full text reads as follows: as assessors.

Weir and Mr. James Swinburne, appointed by the Air Ministry as assessors. The full text reads as follows:—

My Lord,—I have the honour to submit my report of the formal investigation which you appointed me to hold of the accident which occurred at sea to the aircraft G-EBMT. Air Commodore J. G. Weir, C.M.G., C.B.E. and Mr. James Swinburne, F.R.S., M.Inst.C.E., who were appointed by you to act as assessors for the purpose of such formal investigation, sign the report. On June 17 of this year, when this aircraft, known as the "City of Ottawa," was some twelve miles from Dungeness, on its journey to Le Bourget, amishap to the starboard engine occurred which induced the pilot to turn and endeavour to reach the English coast, which he failed to do. In landing, some three miles from Dungeness, the aircraft struck the water with considerable violence, the floor was prised up, the pilot shot out of the cockpit some yards ahead of the aircraft, water rushed into the cabin, overwhelming its occupants, and almost immediately the greater part of the fuselage became submerged. Four of the 11 passengers, together with the pilot (Rudolf Paul David Brailli) and the engineer (Nigel Robert Barnett) managed to escape from the cabin, and were got on board a trawler near which the pilot had alighted, but the lives of seven of the passengers were lost, four only of the bodies being recovered. The aircraft was taken in tow by the trawler, and was beached near Dungeness lighthouse. Under Major Cooper's directions, the starboard engine was removed and transported to Croydon, and a detailed examination made by him of the parts.

The aircraft was built for Imperial Airways, Ltd., by Messrs. Handley-Page, Ltd., and since its delivery, in the early part of 1926, had been in regular use on the former company's air routes. It was of the type W.10, and was equipped with two 425-h.p. Napier "Lion" engines, which had been supplied to Imperial Airways, Ltd., at an earlier date by Messrs. D. Napier & Son, Ltd. The aircraft was completely overhaul

occurred, probably had been reduced by fuel and oil consumption, after 50 mins. flying, by some 425 bs., it being then approximately 70 per cent. of the permissible load. The load was properly distributed, as is shown by the fact that with the controls balanced, the tail setting of the aeroplane was not in any abnormal position.

Documents relating to the load, as also the certificate of safety for flight, and all other relevant certificates, have been produced, and have been inspected by me, and found to be in order.

Major Cooper's detailed examination of the starboard engine revealed that the front, or No. 4 connecting rod assembly, was completely broken up, and that this was obviously the result of a fracture of the big-end bearing studs. In bis view, with which I agree, the pair of studs on the port side of the learning fractured by fatigue, the front stud being the first to fail, and this was followed by the two studs on the starboard side also failing. None of the damaged or broken partrs was discoloured by heat.

After a very careful consideration of the evidence, which has dealt exhaustively with the manufacture of these studs and the suitability of the steel used therein, I am definitely of the opinion that nothing that human forestful could have done in providing against this primary cause of the starboard engine becoming relatively useless was omitted, either on the part of Messrs. D. Napier & Son, Ltd., or on the part of Imperial Airways, Ltd., or their personnel. It is a case similar to many with which all who have to do with machinery are familiar, the metal of some part becoming fatigued for some reason which remains an unsolved mystery. Evidence was given of an almost identical mishap to an engine in a R.A.F. machine, and also of some few other instances of studs failing.

By the case of the matter any further. I regard myself, however, as fully possible is being, and will be done, to minimise the possibility of recurrence risk of neutrence is extremely small.

By B. P. Hence is extremely small

over 7 mins. He described to the Court correctly, the proper course to be followed in making a "pancake" landing. Although he had never landed on water before, he was confident of his ability to accomplish such a landing successfully. The conditions were most unfavourable, there being practically no wind, and subject to there being a swell, the sea being glassy calm, the former fact making it impossible to reduce the flying speed by putting the machine up to the wind, and the latter fact making it very difficult to estimate at all closely the distance of the machine above the water. It seems reasonably certain that the pilot was not sufficiently alive to the difficulty, or indeed impossibility, of landing safely on water with a machine not suitably designed for that purpose. The aeroplane struck the water with great force, and the impact caused two at least of the passengers to be thrown forward with such violence that they suffered injuries, which in one instance were severe. The speed of the aircraft, at the moment of striking the water was over 50 m.p.h., and it may reasonably be accepted that the floor of the cabin was instantly reduced to something like matchwood, and offered little, if any, obstruction to the water rushing into the cabin. Having regard to the absence of wind, this would have happened even if the pilot had succeeded in making a "pancake" landing.

Major Cooper gave it as his opinion that had the seats been rigidly fixed, everybody would probably have escaped. He thought it was not open to doubt that when the machine struck the water, the passengers on their seats were hurled forward in a heap against the front of the cabin. The evidence given by the technical adviser to Imperial Airways, Ltd., as to the means by which the seats were fixed to the floor, satisfied me that it would be wrong to regard these matters as established. I should add that Imperial Airways, Ltd., are making experiments with the view of improving, if possible, the method of fixing the seats. Sir W. Sefton Brancker refe

chair. I only mention it that it may receive consideration, and not as indicating that I have formed the opinion that it is desirable to provide such a belt.

The aircraft was equipped with "Oliff" lifebelts. Such lifebelts have been supplied by their makers in very large numbers for Government purposes, and were, in fact, supplied as standard during the war to the Air Ministry and to the Admiralty. They have been supplied to all air lines throughout the world, and it was given in evidence, on behalf of the makers, that no complaints of failure had been received by them. Their inflation is accomplished by the release of compressed air contained in a small cylinder which is enclosed in a pocket in the belt, the release being effected by operating a lever which the wearer should press upwards for that purpose. It is regarded, and I think quite rightly, that, having regard to their size when inflated, it is most important that they should not be inflated while the passenger is still in the cabin of the aeroplane. It is also possible to inflate the belt by the mouth by using a valve at the top of the belt. These belts are periodically inspected by Imperial Airways, Ltd., the cylinders being weighed to ascertain whether they are in a charged condition. They had been inspected on May 30, when the compressed air cylinders were examined and weighed. It is no part of the pilot's duty to inspect the same, or to see that the instructions how to use them, contained in a small leaflet which refers also to several other matters, are available for, or are brought to the knowledge of the passengers. In his evidence, the engineer said that he stood at the foremost part of the cabin, and pointing to the lever, said "this lever for inflation," and by making an upward movement with his right hand, indicated what the passengers were to do to inflate the belt. He gave a demonstration in the witness box how to put the lifebelt on, and how to inflate it, which showed that he was not adept in the use of the appliance. No copies of the

instance, there was evidence that the belt did not work properly. The possibility of providing some means of releasing the compressed air which can be more easily worked should be considered, if the supply of this lifebelt is to be continued.

Mr. Alan Ernest Fleming, Mrs. Fleming, his wife, and Mr. Homer Williard Tatham, gave important evidence as to the lifebelts and the instructions they obtained how to use them. Miss Smith, who also survived, was not called, as I was told she was unwell, and I did not regard it as necessary to trouble her. Mr. Fleming said he saw no demonstration by the engineer of the method to be adopted in inflating the belt, and had no idea how to inflate it, nor did he try to do so, except by the use of the valve. When his belt was tested, it was found impossible to inflate it. Mrs. Fleming said she did not see any demonstration by the engineer, that when she asked him how the belt worked he pointed to the lever, that she asked her husband, who shook his head, showing he did not know how the belt worked, and that had she tried to inflate it, she would have endeavoured to do so by using the valve on the top. She did not afterwards try her belt to see whether it worked properly. Mr. Tatham said that although on other planes he had seen the leaflet referred to above in a small receptacle at the back of the seats, there was none there on this aeroplane, that he asked the engineer whether he should blow on the valve at the top to inflate, and received the answer, "No, do not inflate the belt until you are out of the plane." He also said that he did not know of the cylinder of compressed air, but had some idea that something had to be done with the lever to inflate the belt. He did not inflate his, and when he was on the boat, or on the wings of the 'plane, enquired of the engineer how one worked the belt. The engineer tried it, but was not able to inflate it.

I am not prepared to say that a lifebelt better adapted for use by passengers can be devised. I recognise that if the present belt i

out the regulation.

Notwithstanding what I have said as to the lifebelts and the matter of instructions as to their use, I am of opinion that there is no evidence which would justify the view that any loss of life was occasioned, either by the nature of the lifebelt or the insufficiency of the instructions received by the

passengers how to use it. There is, in fact, no evidence that any of the passengers who lost their lives escaped from the cabin alive. Notwithstanding the provision of lifebelts, it is evident that everything possible should be done to obviate conditions which call for their use. It is important that their provision should not operate as any inducement to attempt a landing on water with any machine not specially designed for that purpose. The conduct of the passengers was in every respect commendable, and it is clearly established that none gave way to panic. That they received no warning of the shock occasioned by the aeroplane striking the water, is explained by the fact that the pilot did not expect anything of the kind to occur.

is clearly established that none gave way to panic. That they received no warning of the shock ocasioned by the aeroplane striking the water, is explained by the fact that the pilot did not expect anything of the kind to occur.

The pilot gave it in evidence that he chose Dungeness to Etaples, instead of a shorter sea route, because of a very decided haze extending across the Channel. He was flying at no more than 3,000 ft., if as high, when he left the coast, there being fairly dense cloud at about 3,000 ft. The regulations of Imperial Airways, Ltd., as to Channel crossings, which would appear to have been in force since December, 1926, prescribe, in the case of a twin engine machine, at the time of leaving the coast, a height of 5,000 ft., at least, for the route Dungeness-Etaples, 3,000 to 5,000 ft. for the route Dymchurch-Boulogne, and if under 3,000 ft. prescribe the routes Calais-Dover, or Folkestone-Cape Gris-Nez. They further prescribe that when weather conditions permit, a height of at least 3,000 ft. should always be maintained while over the Channel, and that should this not be possible on account of weather conditions, the maximum possible height should be maintained. Throughout the proceedings before me, it has been strongly urged, both on behalf of Imperial Airways, Ltd., and on the pilot's behalf, that, notwithstanding these regulations, any departure therefrom is a matter for the pilot's unfettered judgment. Accordingly, although he departed from the regulations in taking the Dungeness-Etaples route when the height was not over, but somewhat below 3,000 ft., it is accepted by Imperial Airways, Ltd., that he was entitled to exercise his discretion, and did not lay himself open to any criticism, much less to any blame, for taking this route. That pilots, in the exercise of the discretion allowed them, have frequently departed from these regulations, would seem to have been known to those exercising authority over them, and in my judgment it would not be fair to pick out this occasion as calling fo

of 250 ft. per min., or thereabouts. Tests made with a machine which was a sister ship to the "City of Ottawa," with three-quarters of the permissible load, and the starboard engine switched off, gave a drop of 285 per min. at a speed of 50 m.p.h.

Dathy Express published a letter, written by Capt. Harold Baltour, M.C., M.P., in which the writer expressed himself so ambiguously as to appear to be condemning the conduct of the investigation. He has, however, discrowed having had any suda intention. Further, in this letter, Capt. Balfour, after committing himself to the following statement, "on such a clear skirtly as the morning of the accident, a safety height of 5,000 to 6,000 ft. would be perfectly easy to attain at some sacrifice of route time, it must be admitted," referred to the pilot as being reported in the evidence as flying at about 2,000 ft. at the time of crossing. Brig-General P. R. C. Groves, C.B., C.M.G., D.S.O., in forwarding the letter to the newspaper, wrote that he entirely endorsed the views expressed by Capt. Balfour, and thereby added the weight of his authority in support of a very serious allegation against the pilot. The allegation was wholly devoid of any justification, because so far from its being "a clear sky day," the pilot found cloud of considerable density at 3,000 ft., and a haze extending across the Channel. At my request, they attended the hearing and gave evidence. In the course of his evidence, Capt. Balfour brought to my nofice a copy of a letter sent him on June 29, written by another gentleman, and addressed to Imperial Airways, Ltd., dated June 18, in which the writer alleged that on March 20 of the present year, the pilot crossed the Channel at a height 800 to 900 ft. when the weather conditions did not necessitate his flying so low, and that he thought the pilot was Mr. Brailli. On investigating this allegation, I found that on the occasion referred to, the pilot was Mr. Brailli, and that he did fly at about 900 ft., or possibly a little higher. I am satisfied, howeve

Mr. Brailli had heard of this incident, and was undoubtedly influenced

wards. Mr. Brailli had heard of this incident, and was undoubtedly influenced by this in his belief that he would land without mishap. The conditions were in that case, however, much less unfavourable than those on June 17, in that there was a wind of 20 to 25 miles an hour, and a moderate sea. Notwithstanding the fact that the machine struck the water at a speed of about 25 miles only, as against the speed of 50 miles or over on June 17, the aircraft was extensively damaged by the impact, and a considerable part of the fuselage was quickly submerged.

Such devices as flotation bags, means of detaching the wheels, and also the slotted wing have received consideration. With the exception of the device last mentioned, the witnesses did not recommend their use. As to the slotted wing device, Sir W. Sefton Brancker was of opinion that it would facilitate landing on water, and that it might be possible, by its use, to so land without be made compulsory in aircraft used in public transport carrying passengers to places abroad, because I am not convinced that experience of its use as yet justifies this step. If further knowledge establishes the desirability of providing such machines with this device, I should anticipate that it will become standard.

justifies this step. If further knowledge establishes the desirability of providing such machines with this device, I should anticipate that it will become standard.

Considerable and weighty evidence has been given that it is at least desirable that all aircraft used in public transport carrying passengers between Great Britain and places abroad should possess such a reserve of power that if its engine or one of its engines fails, the machine, with full load, can maintain height. In respect of aircraft not specially designed to land safely on water, I accept this view. I recommend that, unless and until development in design makes it unnecessary, it should be a condition of every certificate of airworthiness issued or renewed by the Air Ministry of Great Britain, on or after July I, 1930, in respect of any aircraft not specially designed to land safely on water, and which is not able so to maintain height, that such aircraft be not used in public transport for carrying passengers abroad. It is clear that the essential desideratum in this respect is the provision of sufficient reserve of engine power in the event of one engine failing, and is not necessarily the provision of three or any other specified number of engines. If I rightly understand the facts as to the present fleet of Imperial Airways, Ltd., and such company's programme for additions for the year 1930, this recommendation accelerates such programme, if at all, by a few months. After most carefully considering everything arising in this investigation, I deem such acceleration, if any, to be necessary. If this recommendation is given effect to, not only will the aircraft of Imperial Airways, Ltd., he subject to it, but also all aircraft used in public transport carrying passengers abroad the subject of a certificate of airworthiness of the Air Ministry of Great Britain. The public appreciation that travel by air will be even safer than now, as also longer life of the engine and its parts will, I hope, largely offset the cost consequent upon the adop

It may be convenient that I should summarise the conclusions I have

The primary cause of the accident was the fracture under fatigue of studs in the front—or No. 4—big end bearing of the starboard engine.

(2) This mishap to the starboard engine was of a type which is unavoidable.

(3) So far as human foresight and knowledge permitted, everything was done to make these studs suitable in every way for their purpose. Messis. D. Napier & Son, Ltd., are deserving of high praise for the precision adopted and the precautions taken in the manufacture of these studs with a view to preventing their possible failure.

(4) After the mishap to the starboard engine, land could have been reached, if at all, only by opening out the port engine. No blame attaches to the pilot for not taking the risks involved in increasing the revolutions per minute of the port engine beyond normal cruising speed.

(5) The state of the sea and the absence of wind rendered any landing especially dangerous.

(6) The pilot did not appreciate how adverse were the conditions

(7) The pilot in choosing, under the conditions of weather and cloud which met him when the decision had to be made, the Dungeness-Etaples route, although the height of the aircraft when leaving Dungeness was under 3,000 ft., exercised a discretion which Imperial Airways, Ltd., give all their pilots.

(8) It would have been more satisfactory had Imperial Airways, Ltd., required pilots of passenger-carrying aircraft unable, should one engine fail, to maintain height with full load, to refer to Croydon and obtain sanction for a departure from the Channel-crossing regulations of the company. I was told that such a course would be practicable, and that the company would not be averse to it. Clause 9 hereof, however, I submit as being, in my view, a preferable way of dealing with this matter.

my view, a preferable way of dealing with this matter.

(9) The safety of the public would appear to demand that any aircraft used in public transport carrying passengers between Great Britain and places abroad, which is not specially designed to land safely on water, and which has a single engine, or which does not possess such reserve of power as to make it possible for it to maintain height if one engine fails, should only start the Channel crossing at such height that reaching land on the other side will be a matter of reasonable certainty. It is recommended that such a requirement be made the subject of an Air Ministry regulation, which, in course of time, would cease to have any further application, should the recommendation made later herein, viz., in clause 17, be accepted by the Air Ministry. Air Ministry.

(10) The passengers were not properly instructed how to use the lifebelts. The leaflets containing this information were not available, and not sufficient instructions were given otherwise. These matters are not within the scope of the pilot's duties.

(11) These lifebelts were of a kind which has been supplied in large quantities for Government use. They had been examined, and the compressed air cylinders tested on May 30. In the case of some of them, endeavours to inflate them on June 17 by compressed air failed.

(12) Two matters relating to the lifebelts call for consideration. Whether a lifebelt of sufficient buoyancy, but not too large to make it undesirable for the wearer to inflate it while still in the cabin, cannot be devised, and also whether some simpler means should not be designed for releasing the compressed air to inflate the belt if the present one continues to be provided.

(13) There is no evidence which would warrant the conclusion that any life was lost by reason of a belt not being in proper order, or because of its design, or by reason of the insufficiency of the instruction how to use the belt which the passengers received.

which the passengers received.

(14) Adequate steps should always be taken to provide for the passengers being properly instructed how to use the belts. If the present leaflet remains in use, prominence should be given in it to the necessity to press the lever upwards to inflate. The instructions should be placed on the passengers' seats and should also appear on the belt itself. These matters should be made the subject of a regulation of Imperial Airways, Ltd., and some person specified therein be made responsible for carrying out the regulation.

(15) No recommendation as desirable calling the analysis of the passengers' and some person specified therein the made responsible for carrying out the regulation.

(15) No recommendation is desirable calling for any alteration in the



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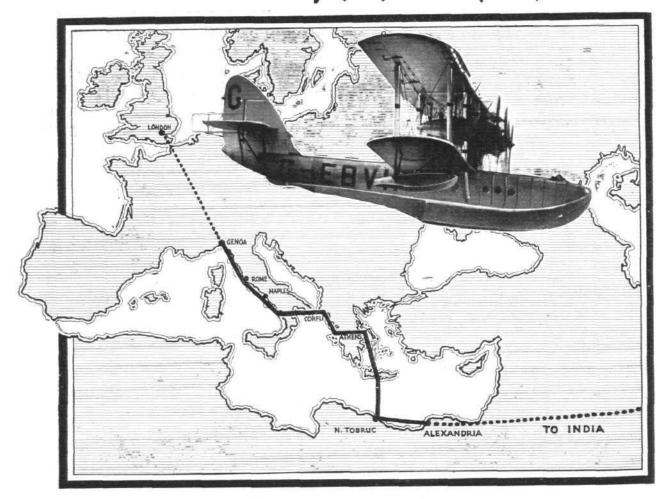
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method at present in use for fixing seats, or as to the provision of a belt to be used to strap the passenger to the chair.

(16) No recommendation is desirable calling for aircraft being provided with flotation bags, means for detaching the wheels, or a slotted wing device.

(17) Unless and until development of design makes it unnecessary, it should be a condition of every certificate of airworthiness issued or renewed by the Air Ministry of Great Britain on or after July 1, 1930, in respect of any aircraft not specially designed to land safely on water which when its

engine or one of its engines fails, is unable to maintain height with full load that the aircraft, the subject of such certificate or renewal, be not used in public transport for carrying passengers between Great Britain and places abroad. It is clear that the essential desideratum in this respect is the provision of sufficient reserve of engine power in the event of one engine falling, and is not necessarily the provision of three or any other specific number of engines.

The Court does not make any order as to costs.







M. BLERIOT AT THE ROYAL AERONAUTICAL SOCIETY

S stated elsewhere in this issue, M. Bleriot again visited London on July 29, and gave an address, accompanied by a film exhibition, before members and friends of the Royal Aeronautical Society and Institute of Aeronautical Engineers, at the Royal Society of Arts.

The President of the Society, Col. the Master of Sempill,

who presided, said :-

"It is a great privilege for us to welcome M. Bleriot here is evening. Since he crossed the Channel on that historic this evening. occasion in 1909 he seems-during the past week, at leastto have formed the habit of crossing it every day. He came over on Saturday last, flew back again to Calais yesterday, and now he has come over specially today to address us and show us a film that has been exhibited only once beforethat is, last night. M. Bleriot has been collecting this film for the past 27 years, and after it has been shown to us tonight it will be taken back to Paris and kept among the archives at Sorbonne.

'I must now express to M. Bleriot, on behalf of the Royal

Aeronautical Society, our great appreciation of the honour he has done us in coming here this evening. "We are indebted to Mr. Bramson, one of our members of Council, for being a connecting link between M. Bleriot and ourselves, in translating what M. Bleriot has to tell us. I now have much pleasure in asking M. Bleriot to address

M. Bleriot said :-

" In expressing my views on the future of aviation I will say, first and foremost, that it is a very difficult subject, and a vast one.

"I regard the aircraft of the future as a kind of supermarine craft which will supersede every surface marine craft in that it will require far less machinery for its operation.

"It does not follow, however, that I think all aircraft of the future will be hydroplanes or flying-boats, for I believe that a very great proportion will be a type of land machine. For example, I think that five or ten years hence aerial communications between Europe and America will be by means of floating islands between this country and the U.S.A., and that they will very probably be operated by land machines.

"For instance, I have seen representations on a small scale of floating islands, the surface of which will be 20 to 25 yards above the surface of the water, and it has been shown by experiments that although the Atlantic might be very much in motion, the surface of those islands would remain practically stationary. The islands will probably have to be kept in place by some means of motive power installed in them, because it will be difficult or impossible to anchor them in mid-Atlantic. I think there

German Flight to Iceland

WE reported last week the flight of the Dornier flyingboat, belonging to the German Flying School at Sylt, from that place to Iceland. It flew south again to Edinburgh, and arrived back on the Island of Sylt on July 24.

New Altitude Record Claimed

The French airman Burtin claims to have beaten the world's altitude record on July 26, carrying a load of 2,205 lbs. He reached, it is stated, 27,060 ft.

Indian Air Mail Protest

THE recent statement by Mr. Wedgwood Benn in the House of Commons that the Government of India had decided to give the Karachi-Rangoon air mail service priority over the Karachi-Bombay service, has been received with indignation by the Bombay commercial community. Bombay Chamber of Commerce wrote to the Government of ludia in the first week of June, pointing out the necessity for the establishment of an air mail service between Bombay and Karachi. The Chamber stated that Bombay, one of the most important cities of the Empire, was placed at a great disadvantage by not being in direct aerial communication with the city of the communication with the city of the communication with the city of the cit with the air service to Karachi, although mailed matter

will probably be need for six or seven of these islands between this side and the other?'

To make it easy for machines to find their way from one island to the other there will be a completely organised

chain of direction-finding wires.

It may be that these islands can be operated by means of ordinary aircraft, though it is more probable that special machines will be designed for the purpose; but they are not likely to be flying-boats or seaplanes, because however large these become, if they have a forced landing in a really agitated sea with high waves they will be bound to come to grief.

I think that the future transatlantic machine will consist of two great wings carrying what is virtually a safety boat, which, if it has to come down on the Atlantic, can throw away the wings and float as an ordinary lifeboat. boat will have to be completely closed in and unsinkable, and there will be a semi-automatic device for throwing away the wings and detaching them immediately the boat touches

the water.
"Although there will be six or seven floating islands in the scheme, it is probable that in case of fog at one island the machine will not land there, but will proceed to the next one, having a special arrangement to cover two sections

of the line.
"I am further of the opinion that the final solution of the problem depends first and foremost upon very careful ground organisation of the route, rather than upon any very essential invention or progress in the construction of the machines. In other words, machines of to-day can do

the job.
"The film I am now going to show you is one which has been built up bit by bit, and was originally intended for the entertainment of my own family. I would, therefore, like to point out that it is necessarily rather scrappy, and of a more or less private nature. It is also rather old in some parts, the early portions dating back to 1905."

M. Bleriot's very interesting film was then shown, and this

followed by a film brought over from America by Mr. W. P. MacCracken, junr., who has control of all the commercial and civil aviation in the U.S.A. This film

showed an aeroplane in a flat spin.

Mr. MacCracken said it was a privilege to be able to express, on behalf of those present and the R.Ae.S., their gratitude to M. Bleriot, not only for bringing over the film and showing it to them, but particularly for having done the work there recorded. It had been a great contribution to the spinger of appropriates and typifed the great foregight to the science of aeronautics, and typified the great foresight of M. Bleriot that he should compile a record that could be passed on to posterity. He therefore suggested that they pass a vote of thanks. This was passed accordingly.



received at and dispatched from Bombay formed a large part of the total mail. The demands of the Bombay Chamber of Commerce have since been strongly supported by all the leading chambers of commerce of the Bombay Presidency and South India. At present it takes mails more than two days to reach Bombay from Karachi.

Aircraft to Fight Locusts

A COMMITTEE of Civil Research suggests that aircraft should be used for fighting locust swarms, whose periodic invasions cause immense financial loss. It recommends a programme of research lasting four or five years, costing between £20,000 to £30,000, and states the desirability of arrangements being made to secure the co-operation of the Royal Air Force in locust-inhabited countries. Where this assistance was given appropriate arrangements would require to be made to reimburse air votes in respect of the expenditure involved.

Aircraft Equipment on Modern Liners

THE new North German Lloyd liner Bremen, which has just made a record trip to New York, carried an aeroplane for despatching a film of its departure from Bremerhaven when 400 miles from New York.



SCHNEIDER CONTEST, 1929

THE Royal Aero Club has made arrangements whereby a limited number of day tickets will be issued to Members of the Royal Aero Club and Associated Light Aeroplane Clubs to witness the contest for the Schneider Trophy, to be held on Saturday, September 7, 1929, from the s.s. "Orford," which will be berthed at the starting and finishing line off Ryde Pier.

Members may apply for not more than two extra tickets

The price of the day tickets is £2 2s. each, which covers transport by the club tender from Southampton to the s.s. "Orford," and return to Southampton.

Buffet luncheons and teas will be available on the s.s. "Orford" at reasonable prices.

Transport Arrangements

A special train for the Members will leave Waterloo on

Saturday morning, September 7, at 7.5 a.m., arriving Southampton (Town terminus) at 8.50 a.m.

The official tender of the Club, "The Duchess of Cornwall,"

will leave the Royal Pier, Southampton, at 9.45 a.m. sharp, for the s.s. "Orford," and will return from the s.s. "Orford" to Southampton not later than 6.30 p.m.

The special train for the Members for the return journey

to town will leave Southampton (Town terminus) at 8.55 p.m. In order to avoid confusion at Waterloo, the Club has arranged with the Southern Railway for tickets to be available to Members in advance, and these can be obtained at the Club. No class of carriage can be guaranteed. Return tickets from Waterloo to Southampton, 22s.

All applications for tickets for the s.s. " Orford " and railway tickets must be accompanied by a remittance covering the

cost of tickets required.

Applications will be dealt with strictly in rotation of receipt. Early application is requested.

HAROLD E. PERRIN, Secretary.

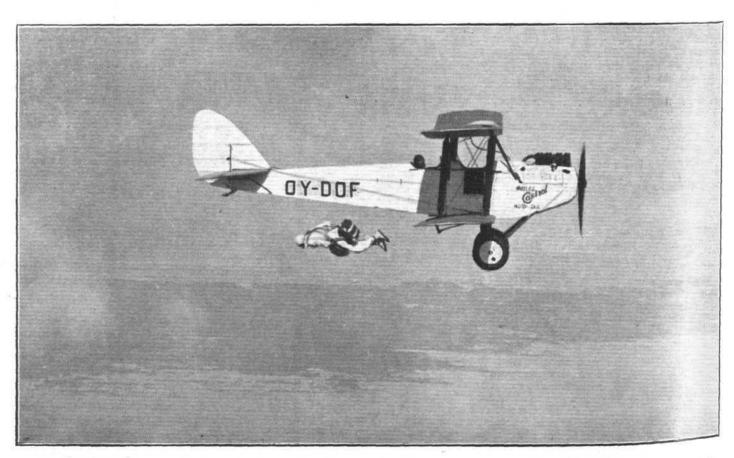
Schneider Trophy Race

THE Royal Aero Club announces that the draw has been made for order of starting in the Schneider Trophy Race which will be held on September 7. The ten machines are scheduled to start as follows: America 1, England 2, France 3, Italy 4, England 5, France 6, Italy 7, England 8, France 9, and Italy 10. News also comes to hand of the American entrant, of which there is only one. It was unofficially stated last week that neither America nor France would compete. The decision entirely depends upon the successful tests of their respective machines. Lieut. Alford J. Williams, who has been nominated as the American competitor by the United States Navy Department, has been practising at Philadelphia, but, of course, the results are not made known. He has repeatedly stated, however, that he would not enter for the race unless he was certain of

a very high performance of his machine. The performance of the French machines has also yet to satisfy France. Italy has already tested her machines. Our own trials will take place shortly.

An Hospitable Idea

There is a worthy movement afoot to form an Honorary Hospitality Committee of ladies and gentlemen to organise informal luncheons, receptions or dinners to any distinguished Dominion and foreign visitors connected with aviation. We hope to give more particulars later, and in the meanwhile we would point out that Viscountess Elibank has been approached with a view to her forming such a Committee, and she asks for donations and suggestions to be sent to her at 238, St. James's Court, London, S.W.1. Tel.: Victoria 2360.



PARTING COMPANY! This remarkable photograph shows Mr. John Tranum and his Russell-Lobe parachute just after quitting the "Moth" belonging to Mr. M. E. I. Jensen above Kastrup Aerodrome, Copenhagen, at an altitude of 3,000% feet. The photograph was taken from another "Moth" belonging to Mr. Thielst.



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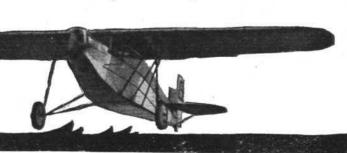
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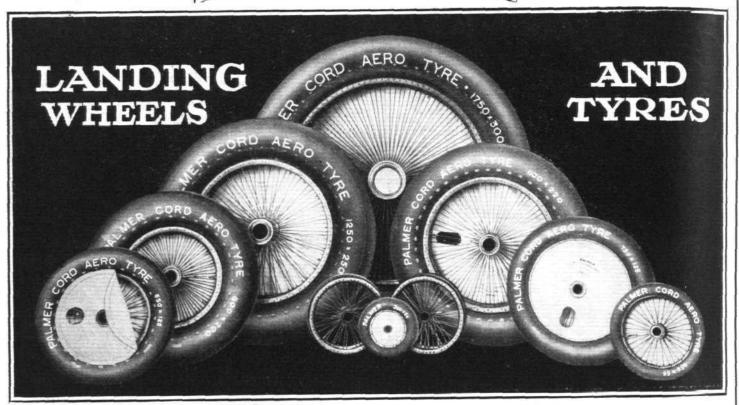
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^{*} Wheels Nos. 161, 162, 163, and 211 are of stronger type than the other wheels for 800 × 150 tyres. † Wheel No. 169 is fitted with Ball Bearings. (A|SI)

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The Club members of National Flying Services join not one club but actually a group of clubs, of which the Country Club at Hanworth (30 mins, from the West End) is the first of the chain. The organisation, when completed, will embrace 71 flying stations.

A limited number of members are now being admitted to the Hanworth Club at the following rates: Flying members, 5 gns. entrance fee, and 5 gns. annual subscription; Non-Flying members, 3 gns. in each case. For this year, two-thirds of the annual subscription is being rebated. It is estimated that for the average member the cost of learning to fly will be under £25. After learning, flying charges scale down to 1 per hour.

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Station -Feltham, Southern Railway.

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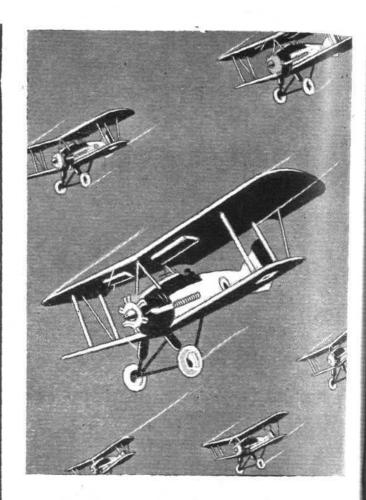
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HE ROYAL AIR FO

London Gazette, July 23, 1929.

General Duties Branch
Air-Commodore P. F. M. Fellowes, D.S.O., is appointed Director of Personal

Air-Commodore P. F. M. Fellowes, D.S.O., is appointed Director of Personal Services, Air Ministry July 1.

362672, Sergt. E. C. W. S. Smith is granted a permanent commn. as Pilot Officer on probation, with effect from July 15, and with seniority of June 17. The following Pilot Officers on probation are confirmed in rank, February 8:—W. R. Hartwright, N. C. Odbert.

The follg. Pilot Officers are promoted to the rank of Flying Officer:—F. B. S. Downey, G. F. Hales, F. L. Truman, S. I. Ubee; June 9. C. Stephenson, C. H. R. Little; June 14 (with seniority of June 9). G. Wood; June 16 (with seniority of June 9). J. S. Dewar, R. C. Field, E. A. Jones, J. E. MacCallum, N. B. Norris, G. H. H. Procter; June 17. C. W. F. Carter, C. S. Ellison, J. B. Fyfe, R. L. Mills, L. S. Snaith; June 30. A. F. Britton; July 21.

July 21.

Flight-Lieut. J. B. P. Angel is placed on retired list at his own request; July 22. Flight-Lieut. A. L. Chick, A.F.C., is placed on retired list at his own request; May 14. (Substituted for Gasette, May 21.) The short service commns. of the undermentioned Pilot Officers on probation are terminated on cessation of duty; July 24:—L. W. A. Binks, G. H. Binns, J. F. M.

Lieut. M. S. Slattery, R.N., Flight Lieut., R.A.F., ceases to be attached to the R.A.F. on return to Naval duty; July 15. Lieut. R. M. Giddy, R.M., Flying Officer, R.A.F., ceases to be attached to the R.A.F. on return to Corps Duty; July 15.

Accountant Branch
Flight Lieut. H. C. F. Ellis is transferred to Reserve, Class C; July 24.

RESERVE OF AIR FORCE OFFICERS

General Duties Branch

General Duties Branch

The follg. are granted commissions in Class A.A. (ii) as Pilot Officers on probation:—R. A. Robbins, E. G. Villiers; July 8. J. H. Goodden; July 9. R. S. Odd; July 10. J. P. Dewsbury; July 15. C. C. Clark is granted a commn. in Class A as Flying Officer on probation; July 23. The follg. Pilot Officers on probation are confirmed in rank:—E. W. Mackay (June 13); L. F. Hooper (June 25); P. L. D. Teichman-Derville (June 25); P. F. England (July 2); J. F. Legard (July 17). Flying-Officer F. W. Winterbotham is promoted to the rank of Flight-Lieut. and is granted honorary rank of Sqdn.-Ldr.; July 23.

Flying Officer H. A. Denny is transferred from Class A to Class C; July 20. The follg. Flying Officers are transferred from Class C to Class A:—R. H. Mahon (June 19); E. G. Whinney (June 23).

The follg. Flying Officers relinquish their commissions on completion of service:—J. G. Argles, D. R. Sharman, M.C.; July 7. H. A. Record; July 21. Pilot Officer on probation J. O. Mortlock relinquishes his commn. on account of ill-health; July 24.

Medical Branch
Flying Officer G. Clark relinquishes his commn. on completion of service

Flying Officer G. Clark relinquishes his commn. on completion of service July 19.

AUXILIARY AIR FORCE

General Duties Branch

No. 605 County of Warwick (Bomber) Squapron.—The folly. to be Pilot Officer:—J. F. Gummow (June 13)

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch.

General Duties Branch.

Air Commodore P. F. M. Fellowes, D.S.O., to Air Ministry, on appointment as Director of Personal Services; 1.7.29.

Group Captains: H. R. Nicholl, C.B.E., to Air Ministry (D.P.S.), on appointment as Deputy Director of Personal Services; 8.7.29. G. P. Grenfell, D.S.O., to Headquarters Air Defence of Great Britain, for duty as Officer-in-Charge, Administration; 17.7.29.

Wing Commander A. H. Peck, to H.Q., Air Defence of Great Britain for Air Staff duties; 15.7.29.

Squadron Leaders: F. E. P. Barrington, to Air Ministry (D.D.M.); 13.8.29.

L. J. MacLean, M.C., to R.A.F. Depot, Uxbridge; 15.7.29.

Flight Lieutenants: W. A. D. Brook, to No. 13 Sqdn., Andover, 8.7.29.

E.S. C. Vaughan, M.C., to R.A.F. Depot, Uxbridge; 1.7.29. H. J. Gemmel, to Air Ministry (D.D.P.); 15.7.29. S. L. G. Pope, D.F.C., A.F.C., to Air Ministry (A.M.S.R.); 13.7.29.

Flying Officers: A. H. Willetts, to Home Aircraft Depot, Henlow; 9.7.29.

G. I. L. Save, to No. 201 (F.B.) Sqdn., Calshot; 13.5.29. O. G. Williams, to Armoured Car Wing, Iraq; 2.7.29. H. H. Martin, to No. 47 (Bomber) Sqdn., Middle East; 3.7.29. J. N. Young, to Aircraft Park, India; 13.6.29.

Pilot Officers: J. G. W. Weston, to Andover Communication Flight; 4.7.29.

G. E. Agard-Butler, N. Alexander, F. C. Allen, C. A. Ball, G. Bearne, N.

Stratton, J. M. Waddell, G. N. Warrington, G. E. S. Williams, S. N. Wiltshire, G. Calvert, N. J. Capper, I. A. Critchley, C. H. Glover, D. H. A. Golege-Steel, W. E. Grant, D. C. Harrison, W. J. Hodge, A. H. Houghton, G. M. Ievers, F. J. B. Keast, D. W. Lydall, I. L. S. McNichol, C. W. Marriott, C. E. Morse, I. T. Mynors, B. Paddon, and H. G. J. Purcell, all posted to No. 2 Flying Training School, Digby, with effect from 15.7.29. R. F. Williams, to R.A.F. Depot, Uxbridge; 21.6.29.

Stores Branch Flying Officer J. E. Welman, to Home Aircraft Depot, Henlow; 11.6.29.

Accountant Branch

Pilot Officers: H. D. Nicholson, to Station H.Q., Tangmere; 22.7.29. G. E. Shirley, to R.A.F. Training Base, Leuchars; 22.7.29. E. A. Biddle, to Station H.Q., Upper Heyford; 22.7.29. C. F. G. Rogers, to Station H.Q., Worthy Down; 22.7.29. K. Fraser, to Station H.Q., Kenley; 22.7.29.

Medical Branch

Squadron Leader E. D. D. Dickson, M.B., F.R.C.S.(E.)D.L.O., to R.A.F. Officers' Hospital, Uxbridge; 15.7.29.

Flying Officer P. M. Margand (Dental), to Station H.Q., Worthy Down; 20.7.29.

Chaplains' Branch

Revd. T. A. P. King, to R.A.F. Depot, Middle East; 19.7.29.

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Italian Premier's Flight Round Italy

A NAVAL seaplane flew Signor Mussolini, the Italian Premier, round the Italian coast, a distance of 1,250 miles, in 10 hrs. 50 mins. The machine, which was piloted by General Balbo, Under Secretary for Air, and Maj. Maddalena, flew via Ostia (the port of Rome), Naples, Messina, Cape Sta. Maria di Leuca and Brindisi, and the entire coastal flight was completed on July 26 completed on July 26.

New R.A.F. Aerodromes

THE Air Ministry announces the commencement of work on a new aerodrome at Abingdon, Berkshire. The contract has been given to a British firm, and it is estimated the work will take 18 months to complete. Other schemes the work will take 18 months to complete. Other schemes shortly to be placed on contract by the Air Ministry are for an aerodrome at Biggin Hill, Kent, and an aircraft assembly station at Peterborough, estimated to cost £119,000.

Leicester Aero Club

On Wednesday of this week the Leicestershire Aero Club was arranged to be inaugurated at Granby Halls, Leicester, by the Rt. Hon. Lord Thomson, Secretary of State for Air.

A" Widgeon " on Floats

A WESTLAND "Widgeon" light 'plane has been successfully tested as a seaplane. The floats were manufactured and fitted by Messrs. Saunders, of Cowes, Isle of Wight.

National Flying Services

THE statutory meeting of National Flying Services, Ltd., was held in London on July 17. Capt.the Hon. F. E. Guest, Chairman of the Company, presided. Among the points of interest which marked his speech was the fact that they had fixed on the first week in September for the official opening of fixed on the first week in September for the official opening of the Club at Hanworth, where the estate was purchased recently. In the provinces their progress had been satisfactory, for of the ten centres which they had undertaken to

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equip they were on the point of signing agreements with three, whilst hoping to commence erecting their buildings within a few weeks. A final agreement respecting two others was expected to mature shortly and negotiations for the establishment of eight other centres were in progress. It was confidently expected that this initial ten centres would be fully equipped and operated by autumn.

There was a satisfactory report to be made on the member-ship of their clubs. In consequence of the demand they proposed to limit the present rates to the first 250 flying members and 500 non-flying members who joined at Hanworth and the first 100 flying members and 200 non-flying members at other centres. All later members would have to pay double the present published rates. Four types of aircraft will be in service, viz., the Bluebird, the Spartan, A.B.C. "Robin," and the Desoutter cabin monoplane. Of these the Company has the sole world distributing rights of two types, as well as selling rights for practically all other makes of light aircraft. With the exception of the A.B.C. "Robin" their machines for their own use will be fitted at present with the Cirrus engines. An order for a new three-engined type of aircraft is to be placed. The Air Ministry, continued Capt. Guest, has approved National Flying Services as one of the two outside organisations which are authorised to approve aerodromes for Air Ministry licences. The company's proceedings terminated with a vote of thanks to the Chairman and Directors.

Heard at the Show

THE lady who asked to see a Gipsy-Moth complete with "air pockets." And the lady who thought that the Gloster Survey machine (which was not covered with fabric) would be very draughty in flight!

British-Built Salmson Engines.

WE understand that arrangements are being made for the manufacture of the Salmson aero engines in this country.

IN PARLIAMENT

Loss of "City of Ottawa"

Rear-Admiral Sueter, on July 24, asked the Under-Secretary of State for Air whether his Department has reviewed the finding of the committee which inquired into the disaster to the air liner "City of Ottawa" on June 17 last, when seven lives were lost; whether he can state the number of hours the starboard engine had run in the machine before, as is stated in the Report, the studs of the big end bearing fractured under fatigue; and whether the Air Ministry concur in the statement in the committee's report that this mishap was of a type which is unavoidable.

Mr. Montague: The answer to the first part of the question is that the Report is now being carefully examined in all its bearings; to the second part, that the aircraft had flown 126 hours from the time when the starboard engine was installed after complete overhaul up to the commencement of its last journey. As regards the last part of the question, the purport of the passage quoted from the Report is to exonerate Messrs. Napiers and Imperial Airways from any suggestion of negligence, and this finding the Air Ministry accept. The question whether any further precautions can be taken in future to guard against such mishaps as the failure of these studs is being actively pursued by all concerned.

Airships

Rear-Admiral Sueter asked whether his Department has information as to the cause of the latest German rigid airship's failure to cross the Atlantic; and whether the engines of the two experimental airships are considered perfectly suitable in all respects for the forthcoming trials, or whether new engines of greater horse-power should be installed in these airships before extended trials to Egypt and India are made.

Mr. Montague: As regards the first part of the question, from the information that has been published, it would appear that the cause of the breakdown of the engines in the "Graf Zeppelin" in May last was mainly due to "torsional resonance." This is a form of trouble which is apt to develop in engines and the question of obviating it has been under investigation at the Royal Aircraft Establishment during the past few years. A method has now been devised as the result of that investigation for predicting the speeds at which resonance is likely to occur for any given type of engine, so that running at that particular speed can be avoided.

As regards the second part, R.100 and R.101 are fitted with engines which have passed the airworthiness type test and I am fully satisfied that the engines are perfectly suitable for the flying trials at home. I should prefer not to make any definite statement in regard to the long distance flights which have always been contemplated upon the successful completion of the home trials; it is safer to await the result of these latter trials before a final decision is reached in regard either to the exact nature of the long-distance flights or the equipment necessary for them. The trials are expected to take place about the end of September.

Construction and Repairs in the Royal Dockyards

Construction and Repairs in the Royal Dockyards

Sir B. Falle asked the Under-Secretary of State for Air whether, in view of the highly-equipped factories and workshops available at His Majesty's Dockyard, Portsmouth, he will authorise the construction, equipment and repair work of aircraft used by the naval air wing at Portsmouth Dockyard? Sir R. Gower asked whether, in view of the increased use of aircraft in His Majesty's Navy, he will consider the introduction of arrangements for their manufacture in the Royal dockyards?

Mr. Montague: The construction, equipment and repair of aircraft is very highly specialised work which it is considered can be better carried out by firms which exist for that work and have the requisite special plant and experience than by shipbuilding and ship-repairing establishments, even of the well-equipped character of the Royal dockyards.

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AIR MINISTRY NOTICE TO GROUND ENGINEERS

"Avro" Aircraft: Essential Modifications

(1) The attention of all owners of and ground engineers concerned with the undermentioned "Avro" aircraft is called to Leastet D. 3, paragraph 6 (ii) of A.P. 1208, the Airworthiness Handbook for Civil Aircraft, in which it is laid down that the petrol supply from all tanks is to be such that it is not affected by the collection of foreign matter in the sump, and that a method of draining the sump must be provided.

(2) The following are the types of "Avro" aircraft affected:—
Type 504 K, Type 504 N, Type 548, Type 548 A, "Gosport," "Baby,"
"Avenger," "Avian" (all types).

(3) Provisions to meet the above requirements are to be incorporated in all "Avro" aircraft of the above mentioned types before September 1, 1929, or when the aircraft is submitted for inspection for issue or renewal of a Certificate of Airworthiness, whichever is the earlier date.

(4) Unless the above-mentioned requirements have been satisfactorily complied with, no certificates of airworthiness will be issued or renewed in respect of any "Avro" aircraft of the above-mentioned types, and after September 1, 1929, any certificates of airworthiness already issued will become invalid.

(No. 12 of 1929.)

PUBLICATIONS RECEIVED

The Air Annual of the British Empire, 1929 Founded and Edited by Sqdn.-Ldr. C. G. Burge. Vol. I. Gale and Polden, Ltd., 2, Amen Corner, London, E.C.4. Price 21s. net. L'Année Aeronautique, 1928-1929. By L. Hirschauer and Ch. Dollfus. Dunod, 92, Rue Bonaparte, Paris. Price

42 fr.

Woman and Flying. By Lady Heath and Stella Wolfe urray. ' John Long, Ltd., 34, Paternoster Row, London, Murray. ' John Long, E.C.4. Price 12s. 6d.

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AERONAUTICAL PATENT SPECIFICATIONS

(Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = m The numbers in brackets are those under which the Specifications will be printed and abridged, etc.)

Applied for in 1928

Published August 1, 1929

937. H. R. RICARDO. Means for controlling i.c. engines of the liquid fuel-injection type. (314,705.)

948. ART.-GES. C. P. GOERZ OPTISCHE ANSTALT. Apparatus for determining position, speed and direction of movement of invisible aircraft by exclusively acoustic means. (289,872.)

981. A. C. A. HOWETT and W. J. ANDREWS. Parachutes. (314,835.)

439. R. A. A. COUZINET. Devices for testing wing surfaces. (293,875.)

471. R. P. FOX. Dirigible airships. (315,107.)

775. W. S. AUD. Aviators' life-saving suits. (315,121.)

782. F. R. OWENS. Parachutes. (315,134.) 9.948

9.981. 20,439. 21,471. 22,775.

Secret Patents Re-Assigned to the Inventor

Applied for in 1925

Published August 1, 1929

E. A. V. Roe and A. V. Roe and Co., Ltd. Bomb crates and release mechanism for aircraft. (314,666.)

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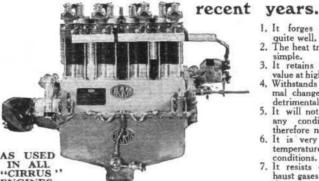
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